作成承認印	配布許可印
ニコン 映像カメラ事業 CS推進部 GM	

F65 (SILVER)FAA37001
(BLACK)FAA37051

N65 (SILVER)FAA37101

u (SILVER)FAA37201
(BLACK)FAA37251

F65D (SILVER)FAA37211
(BLACK)FAA37261

N65QD (BLACK)FAA37351

REPAIR MANUAL

Nikon | NIKON CORPORATION
Tokyo, Japan

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SPECIFICATION

(Specifications and mechanisms not described in instruction manual and catalogues are described here).

1. Outline

This camera offers the thorough automatization, small-size, light-weight, easy operation and low price to accord the general user's needs, and to spread widely as Nikon's most well-sold model.

2. Feature

(1) Substantiality of the automatized functions by the Five-Point AF with Multi-CAM900 Auto-Focus Module and the auto pop-up of the Built-in speed light.
(2) Light-weighted by making the parts by plastic and minimaturization.
(3) Easy operation by the exposure mode dial and the command dial.
(4) The useful functions as the diopter adjustment, AF assistant illuminance, AF-A mode and remote control.
(5) The functions as the AF area selection, pre-view, multiple exposures and bracketing.
(6) The finder of which finder field is bright (Employed the newly developed clear mat and the hollow pentagon.)

3. Viewfinder

Type	Hollow Pentagonal Type Single Lens Reflex Finder
Finder Screen	B-type Clear Mat Screen V
Finder Replacement	Unavailable
Screen Replacement	Unavailable
Finder Visuality Ratio	Approx. 89% both vertically and horizontally
Magnification	0.675 times at $-1.52m^{-1}$ (dpt) 0.604 times at $+0.77m^{-1}$ (dpt) (50mm lens is used. ∞)
Diopter	-1.52 to $+0.77m^{-1}$ (dpt) Can be adjusted by the diopter adjustment lever. 4-step adjustment. The optional eyepiece correction lenses can be used together.
Eye Point	15.9mm (at $-1.52m^{-1}$ (dpt)) 23.1mm (at $+0.77m^{-1}$ (dpt)) 17.05mm (at $-1m^{-1}$ (dpt))
Eyepiece frame	Rectangular Shape (F-401 type, new-type eyepiece rubber is equipped.)
Eyepiece Lens	3 elements in 3 groups (Material: plycarbonate, polyolefine, acrylic)

4. Shutter

① Electronically controlled vertical-travel focal-plane shutter
② Max. Shutter Speed : 1/2000, At Synchronous Second 1/90
③ Curtain Speed : Approx. 8.4msec (24mm Image plane)
④ Traveling Direction : Vertical-travel (Up)
⑤ The Number of Blade: Front curtain 5 elements Rear curtain 4 elements
⑥ Material of Blade : Aluminum Blade and Plastic Blade are used together
⑦ Control Speed Range : 30sec. to 1/2000sec., Time (M mode only)

5. Metering

① System : TTL full-aperture exposure metering system by the IC integrated type six-segments sensor
② Control System : With D-type Nikkor Lens: 3D six-segment Matrix Metering
Without D-type Nikkor Lens: Six-segment Matrix Metering
When the exposure mode is M: Center-Weighted Metering
③ Metering Range : EV1 to 20 (ISO 100, when using F1.4 lens)
④ AE Lock : No lock

6. Auto Flash

① System : TTL-BL Fill-Flash by the IC integrated type sensor
② Range : Built-in speedlight: GN2.8 to 12 (ISO 100 m)
External speedlight: GN2.8 to (ISO 100 m)
③ ISO Interlocking Range : ISO 25 to 800 (Built-in/ External in common)
④ Built-in Speedlight Auto Flash System :
Exposure Mode P, S, A, AUTO, Image program : TTL-BL
Exposure Mode M: TTL
⑤ Full Output Warning : Ready-light in the finder blinks. (For 3 to 4 sec.)

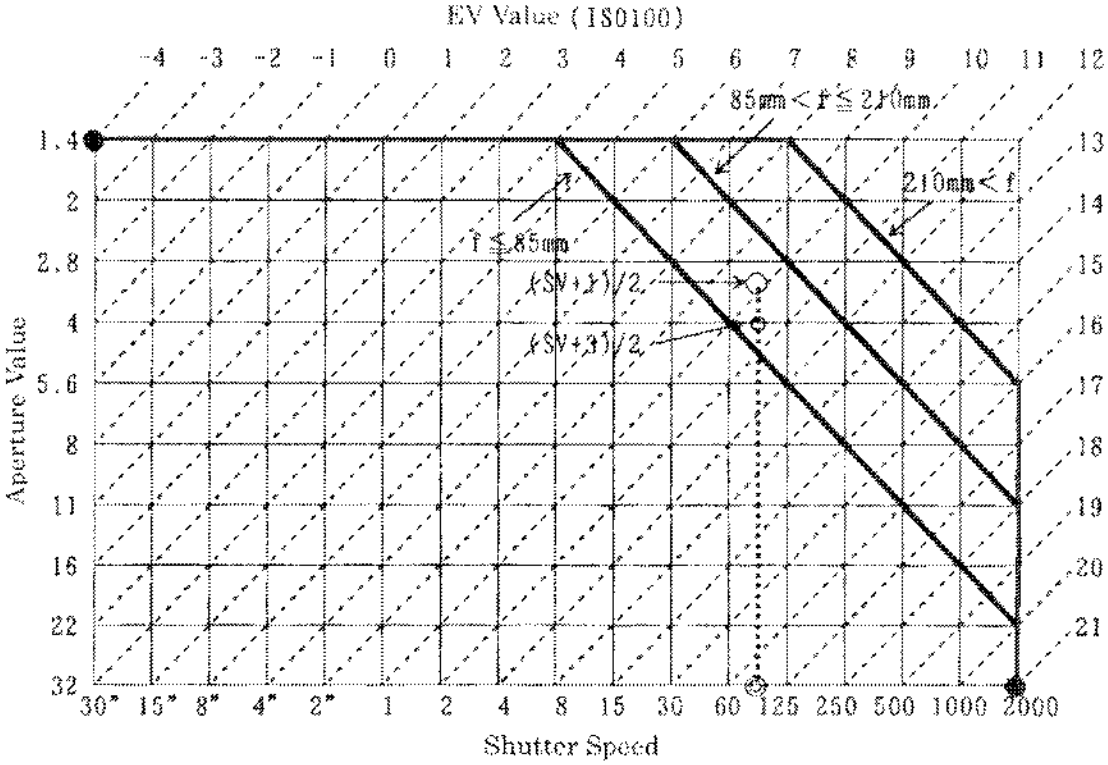
7. External Speedlight

① Communication : Serial communication is available.
② Group : F70 group (But, except the Matrix Balanced Fill-Flash function)
③ Unusable Functions with External Speed light : None
④ Usable Mode : Exposure Mode S, A: All modes
Exposure Mode M: TTL, Non TTL Auto Flash, Manual Mode
Exposure Mode P, AUTO, Image Program: TTL-BL, TTL

10. Program Diagram

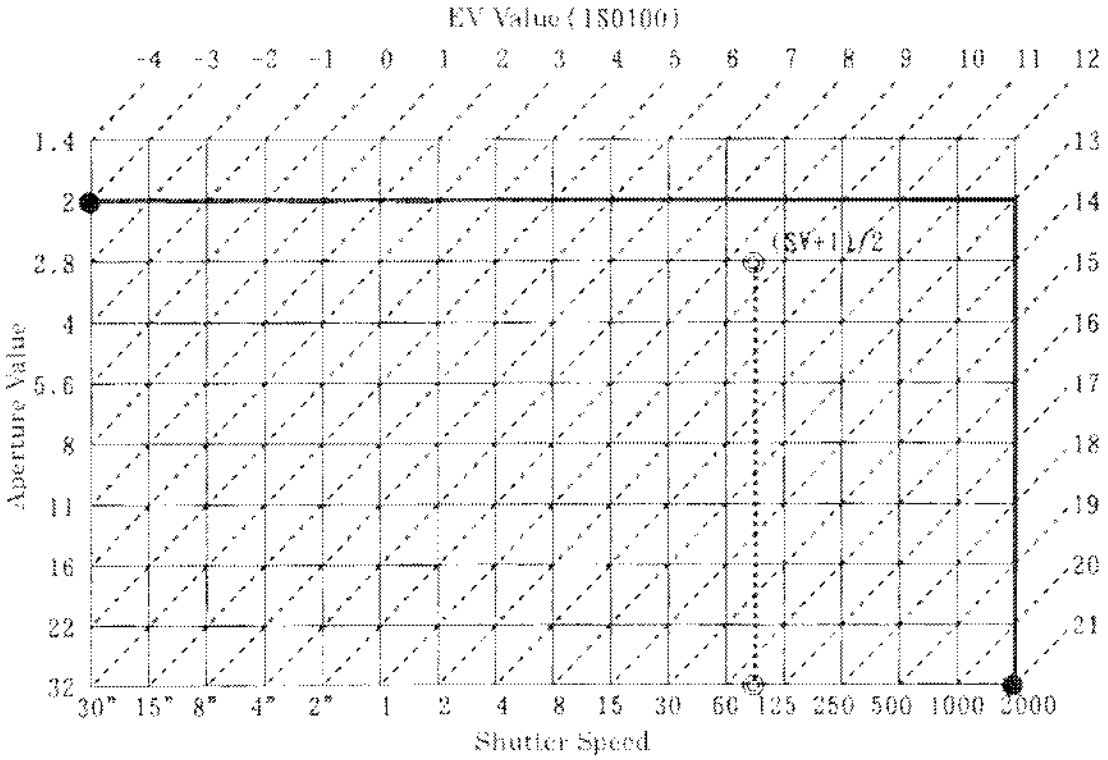
●——● When not using the speed light　　○·····○ When using the built-in speed light
○·····● When using the external speed light

(1) Auto-Multi Program Mode (P) and AUTO Mode (AUTO)

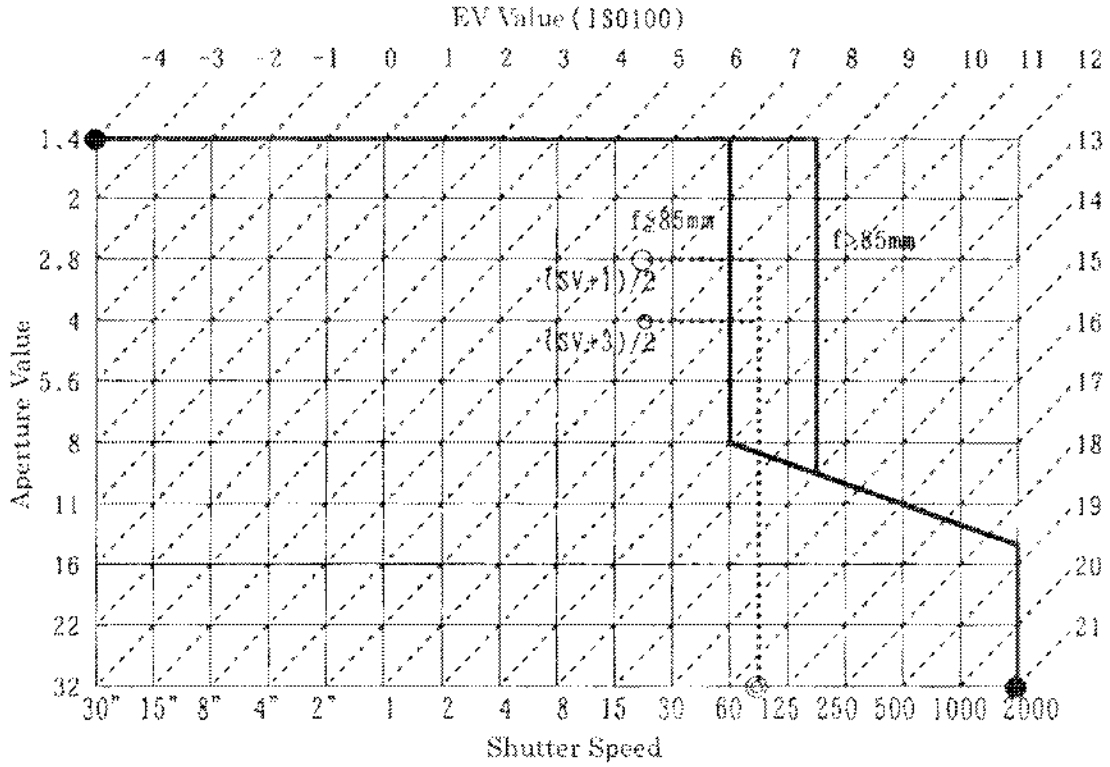


In the control diagram., the limit of the control aperture value at the aperture side is mentioned 1.4, but on the control, the aperture value is available up to 1.0 and the limit is not made. (Since no lens of which aperture value is more than 1.4 can be controlled, the aperture value more than 1.4 is not mentioned in the diagram.)

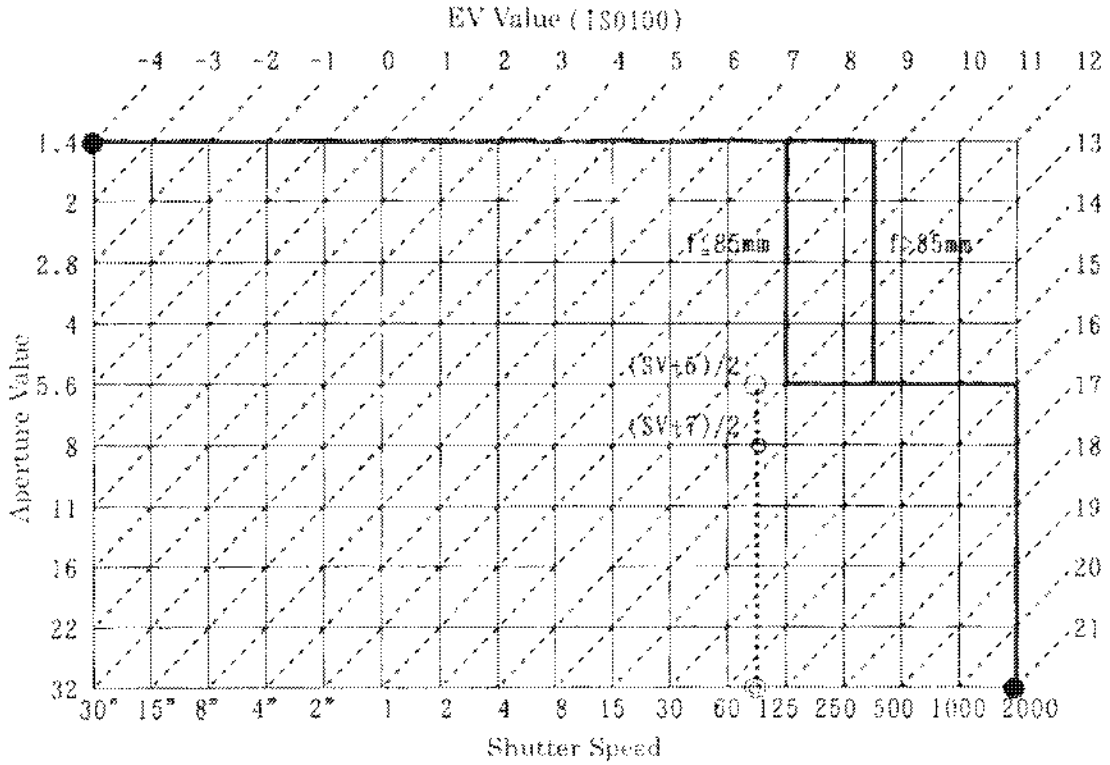
(2) Portrait Mode (🌷)



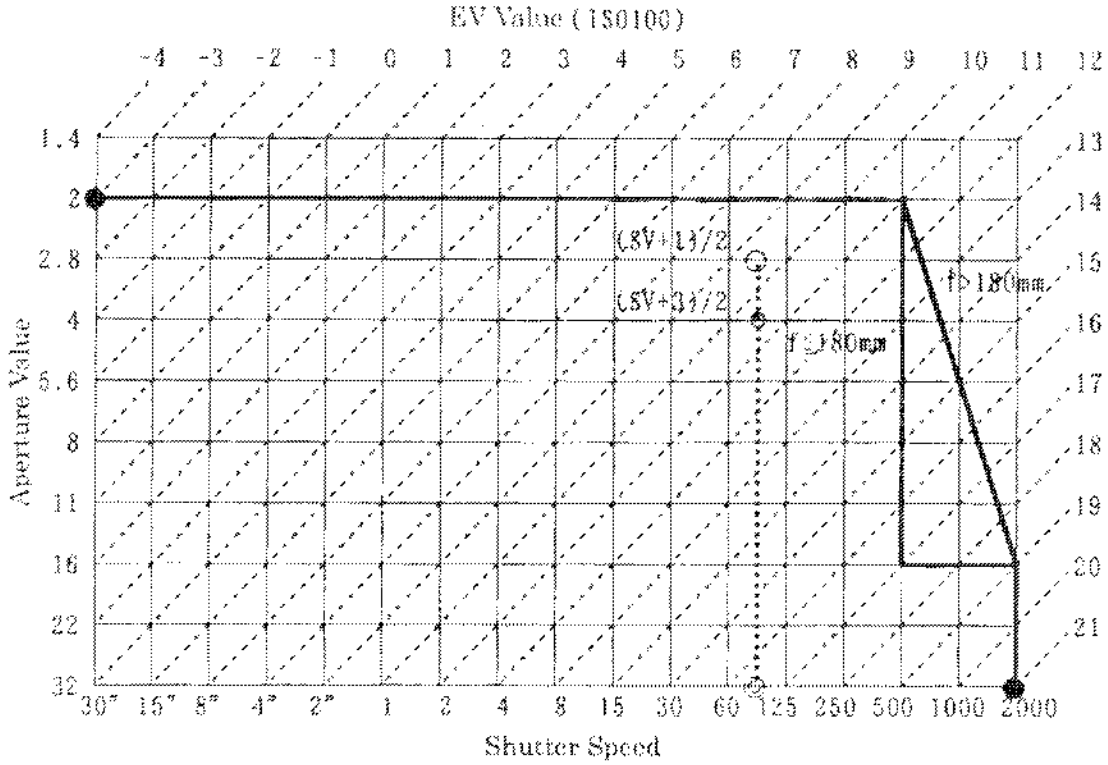
〔3〕 Landscape Mode (🏞)



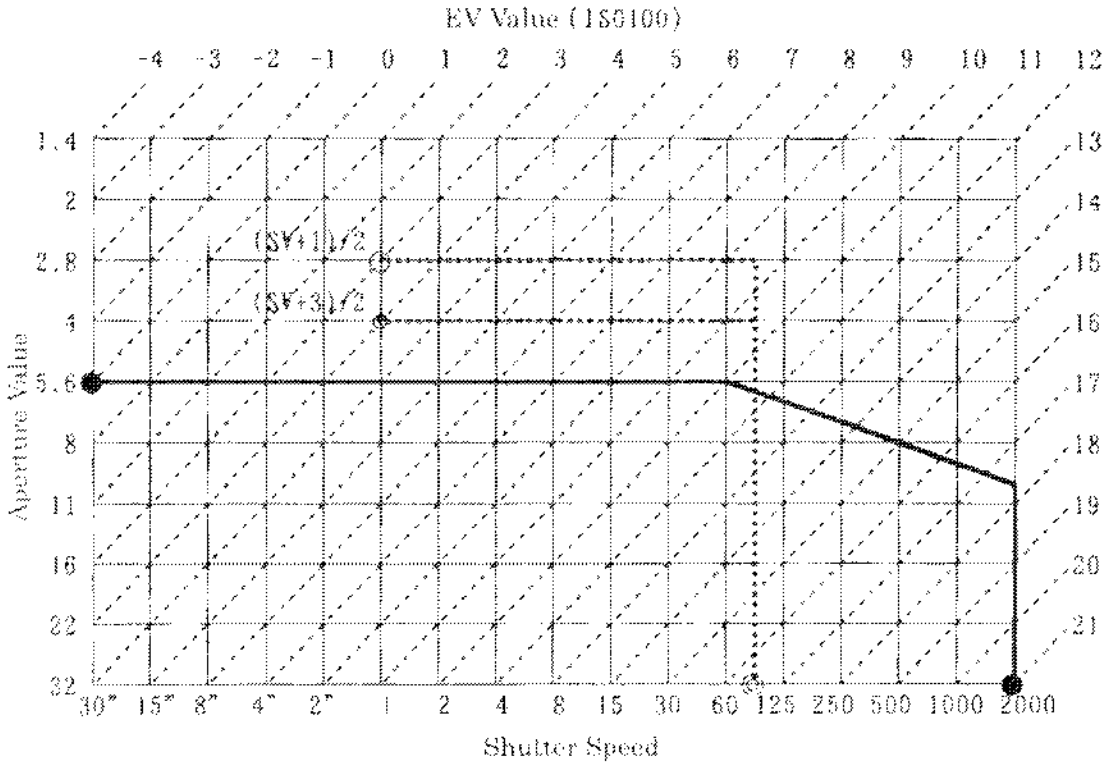
〔4〕 Close-Up Mode (🌷)



(5) Sports Continuous Mode (🏃)

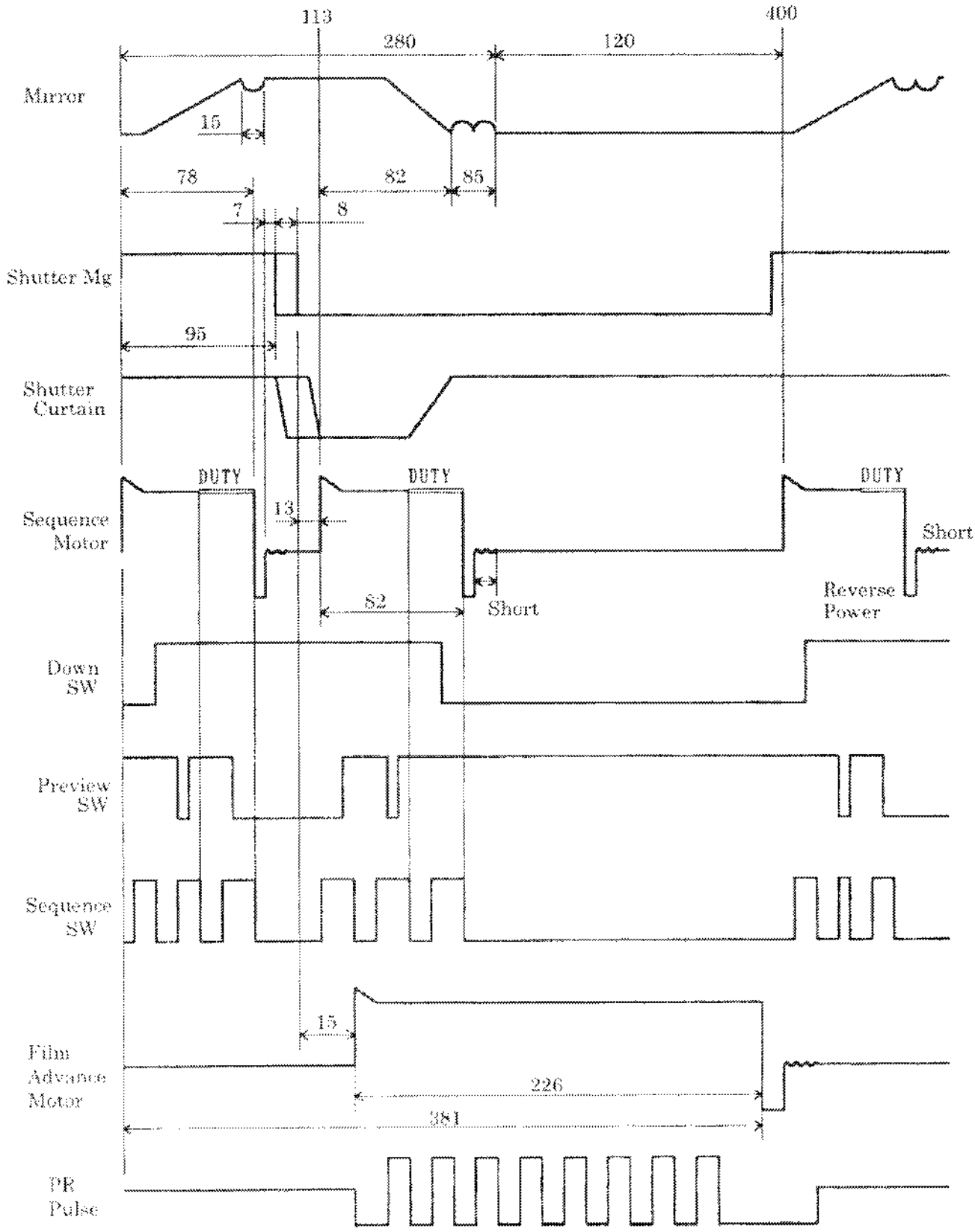


(6) Night Scene Mode (🌃)

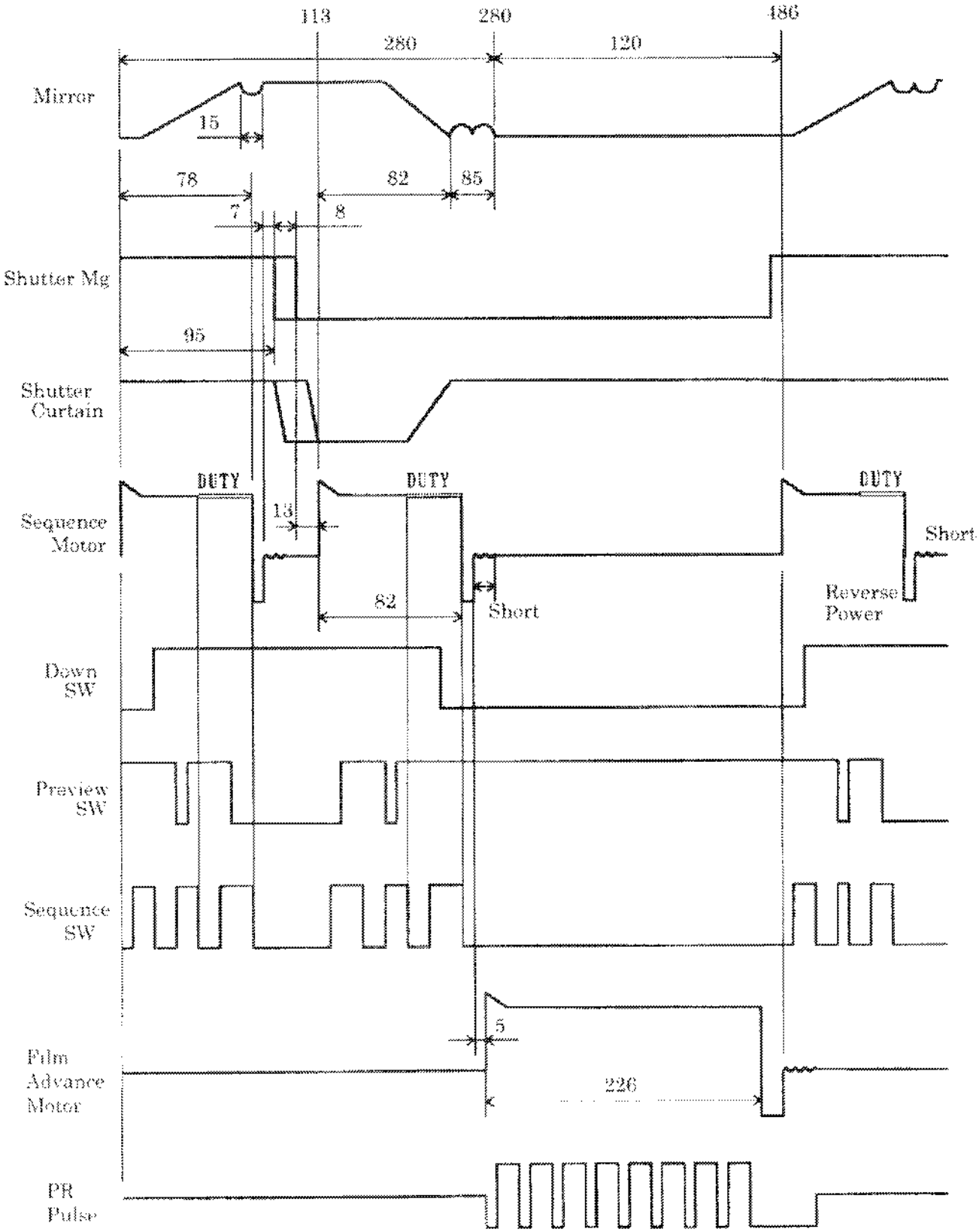


11. Sequence

Parallel Driving



Sequential Driving



12. Mechanism Switches

SWITCH NAME	LOCATION
Back Door Switch	Back Door Open/Close Lever
Sequence Control Switch	SQ Shutter Charge Cam and Front Body FPC (PI BASE PLATE UNIT)
DOWN Switch	SQ Shutter Charge Cam and Front Body FPC (PI BASE PLATE UNIT)
Preview Switch	Front Body FPC (PI BASE PLATE UNIT)
f min Switch	Front Assembly (under the Bayonet)
SP Pop Up Switch	Top Cover FPC (Top Cover Section)

DISASSEMBLY

1. SEPARATION OF THE FRONT BODY FROM THE REAR BODY

BOTTOM COVER, BACK DOOR ····· D 1

FRONT COVER, REWIND SIDE COVER, GRIP COVER ····· D 2

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1. Removal each wires and solder bridge ····· D 3

2. Removal of screw(s) ····· D 3

LCD DISPLAY UNIT

1. Removal each wires and solder bridges ····· D 4

2. Removal of screws and FPC from connector ····· D 4

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SMALL PARTS OF REAR BODY D17

DISASSEMBLING

⚠ WARNING

- Due to its internal high voltage area, make sure to check the safety when removing the cover.
- Be sure to discharge the static electricity from the main condenser according to the instruction in the repair manual after removing the Grip cover.

Note : ① In the assembling and disassembling sections of this manual, we took an initially produced bodies as a model to explain wiring, Wiring are subject to change depending on the period of production and may not conform with the current products. Refer to the actual model.

② Be sure to take off the battery before disassembly.

③ At disassembly, make sure to memorize how to arrange the wires, how to fix the screws, and the types of used screws.

④ Be sure to get yourself grounded because of the static electricity which exerts any serious adverse effect to ICs

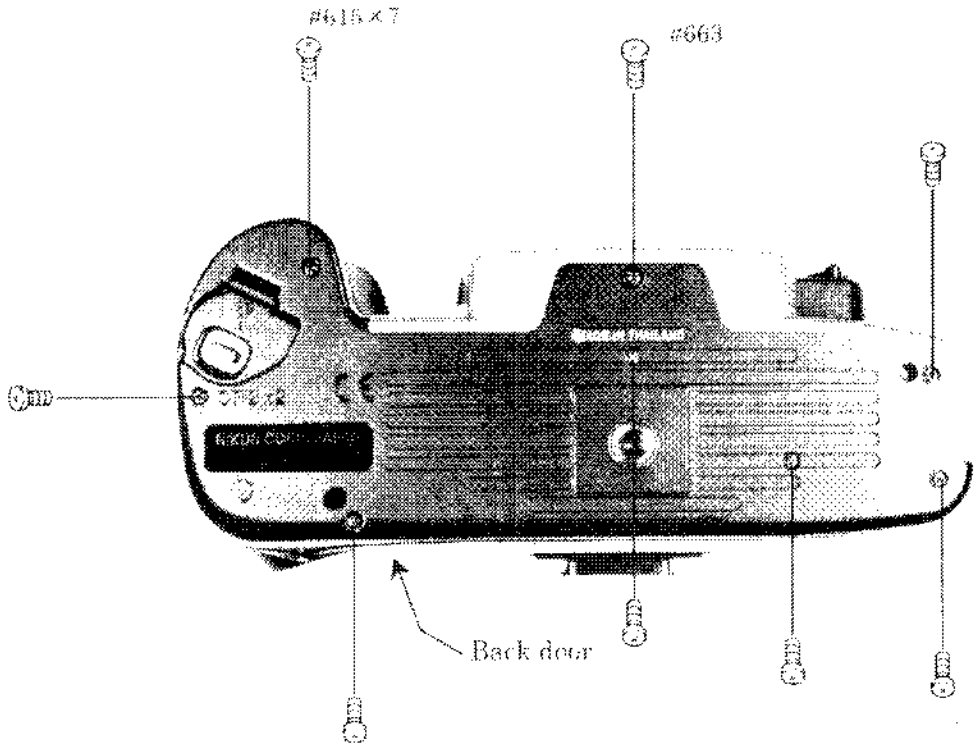
⑤ When you disassemble the camera body further than described in the disassembling section, refer to the exploded drawings and assembling section, since some parts are disassembled as a unit part.

1. SEPARATION OF THE FRONT BODY FROM THE REAR BODY

BOTTOMCOVER, BACK DOOR

• Pull out the shaft x 1 to the bottom first, and then remove the back door.

Notes) Never use the solvent when cleaning the pressure plate, but use the A-level dust cleaning cloth or Savina Minimax and wipe it softly because the pressure plate of this camera is coated with the special paint.

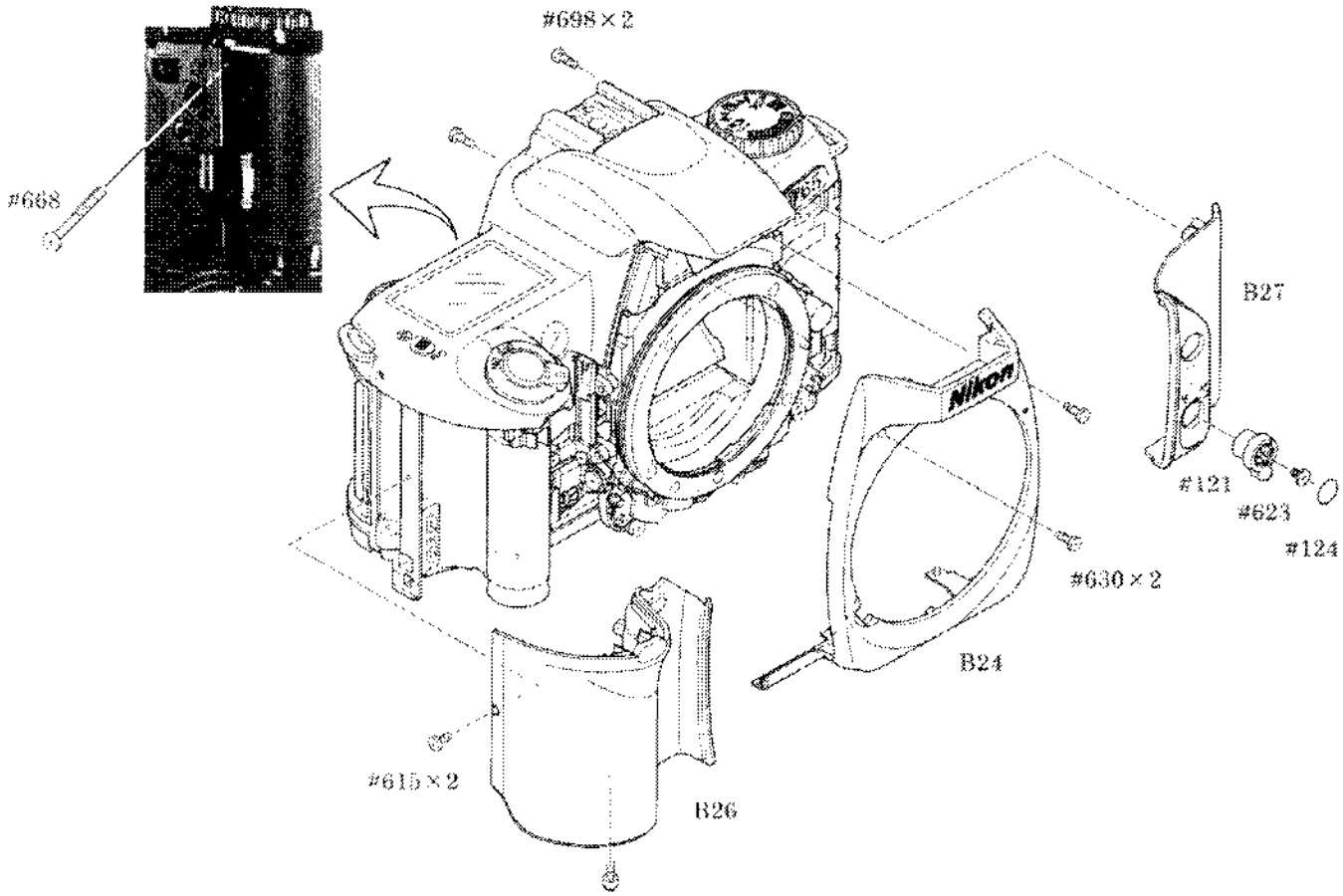


FRONT COVER, REWIND SIDE COVER, GRIP COVER

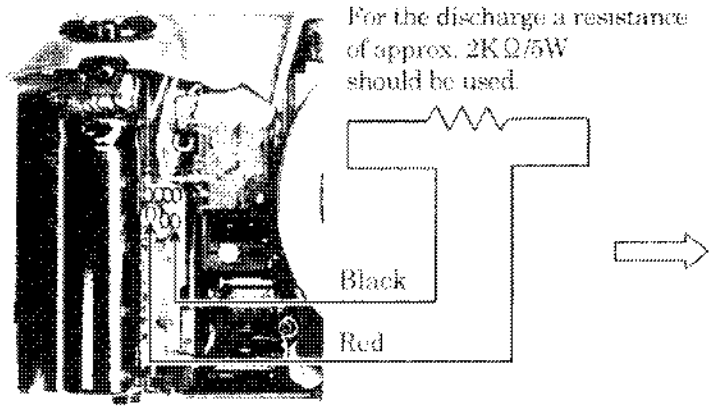
⚠ WARNING

- Due to its internal high voltage area, make sure to check the safety when removing the cover.
- Be sure to discharge the static electricity from the main condenser according to the instruction in the repair manual after removing the Grip cover.

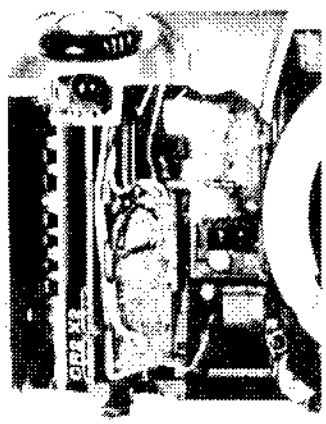
* The order of removal is from front cover B24 first.



* Discharging from the main capacitor

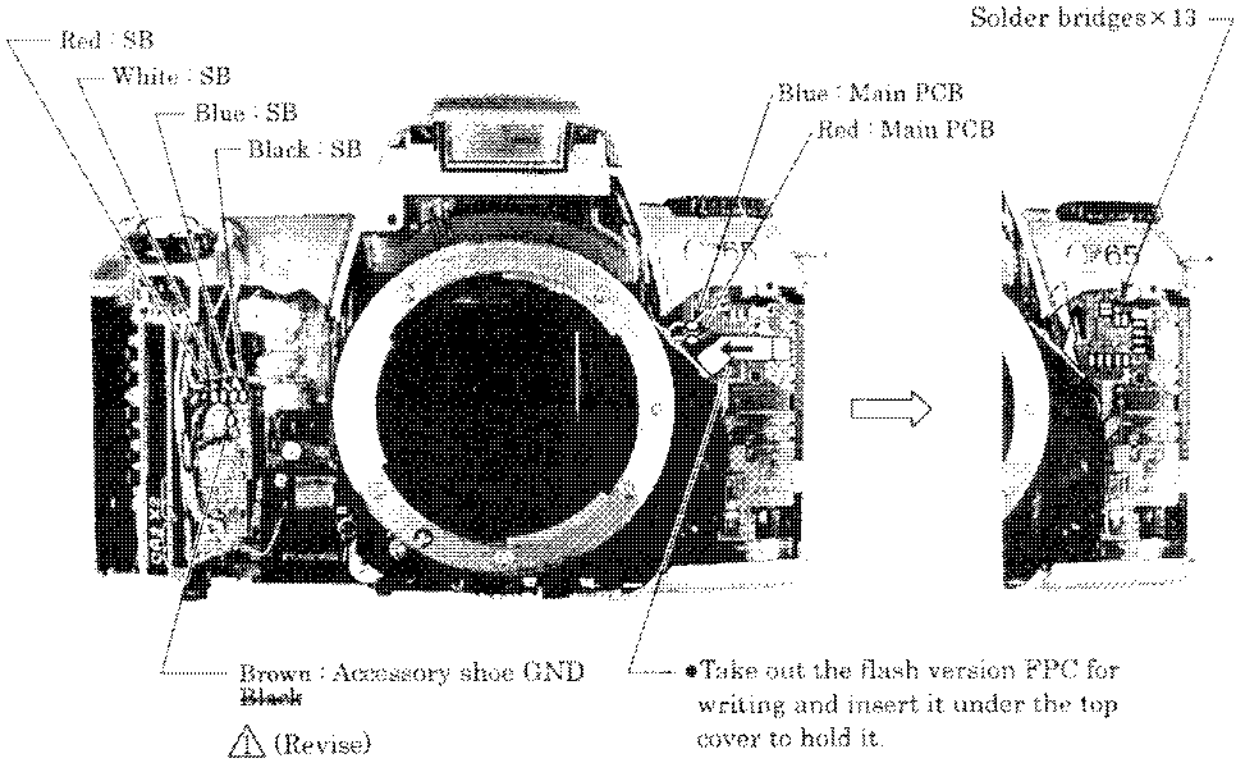


* After discharging, unsolder the red and black wires, and then remove the main condenser.

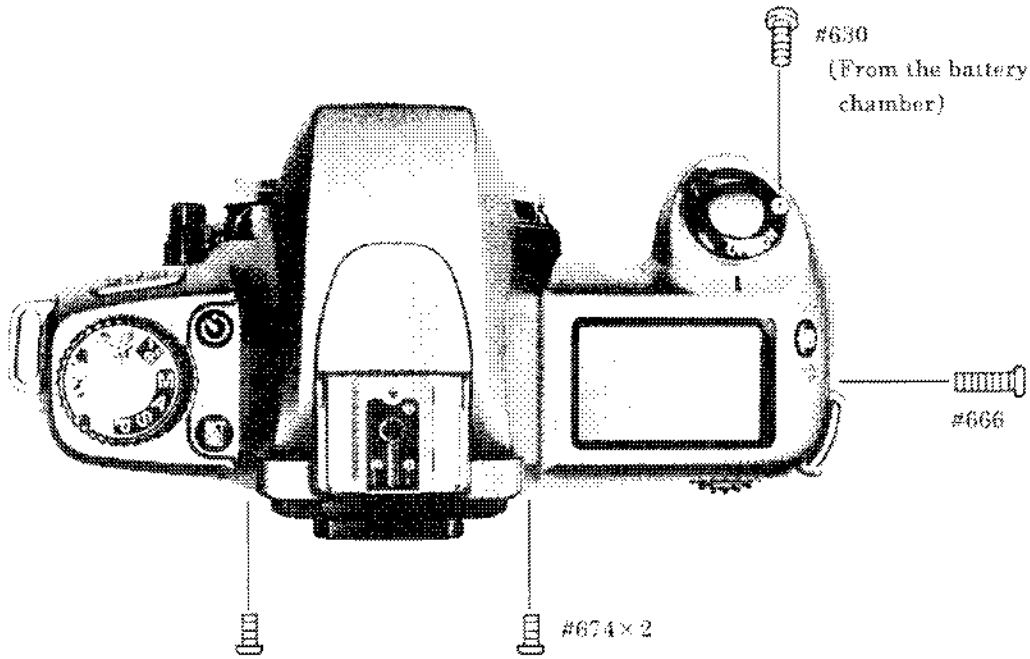


TOP COVER

1. Removal each wires and solder bridges

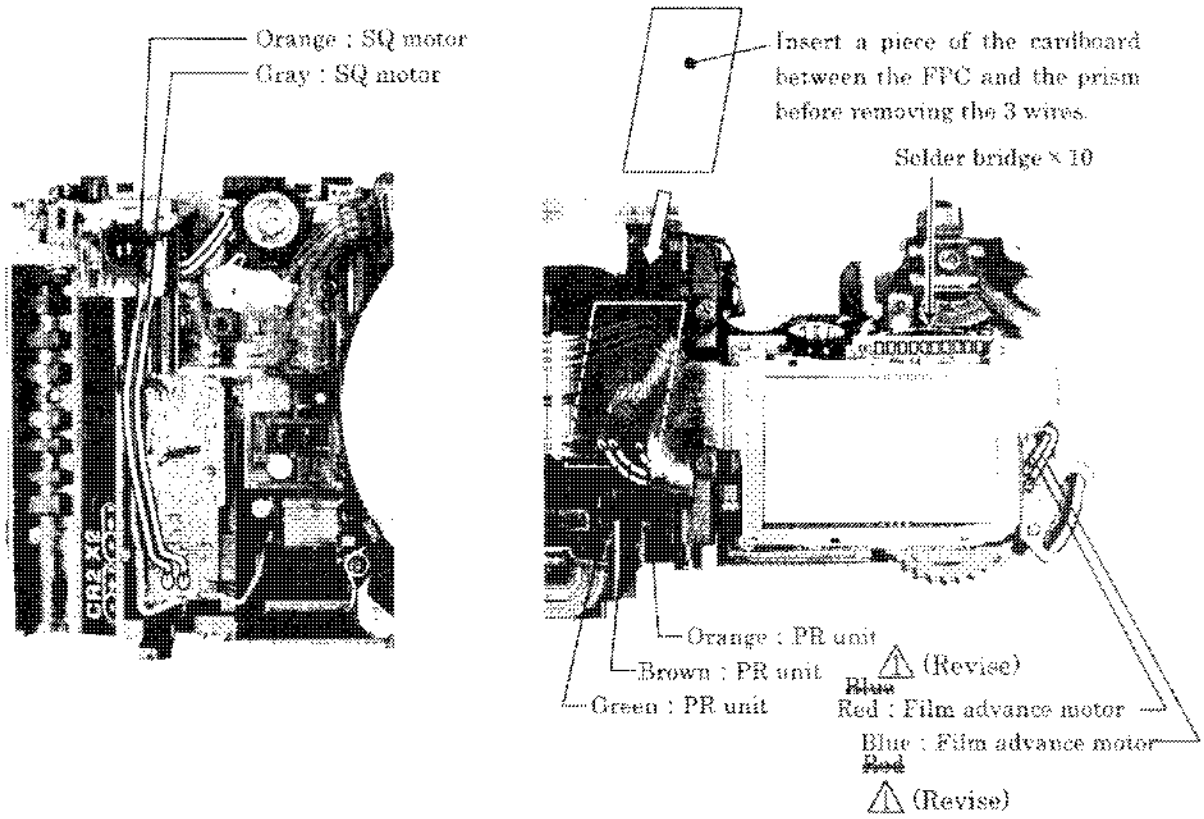

Red : SB
White : SB
Blue : SB
Black : SB
Solder bridges×13
Blue : Main PCB
Red : Main PCB
Brown : Accessory shoe GND
~~Black~~
⚠ (Revise)
•Take out the flash version FPC for writing and insert it under the top cover to hold it.

2. Removal of screw(s)

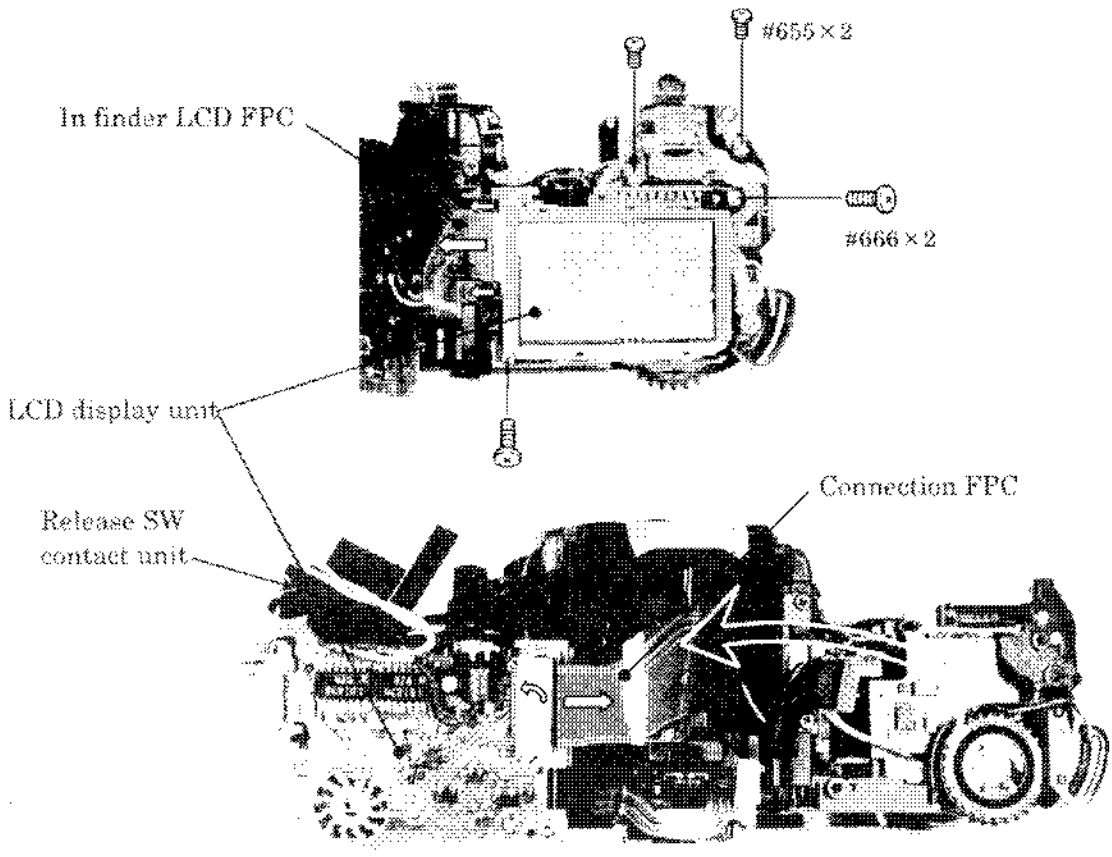


LCD DISPLAY UNIT

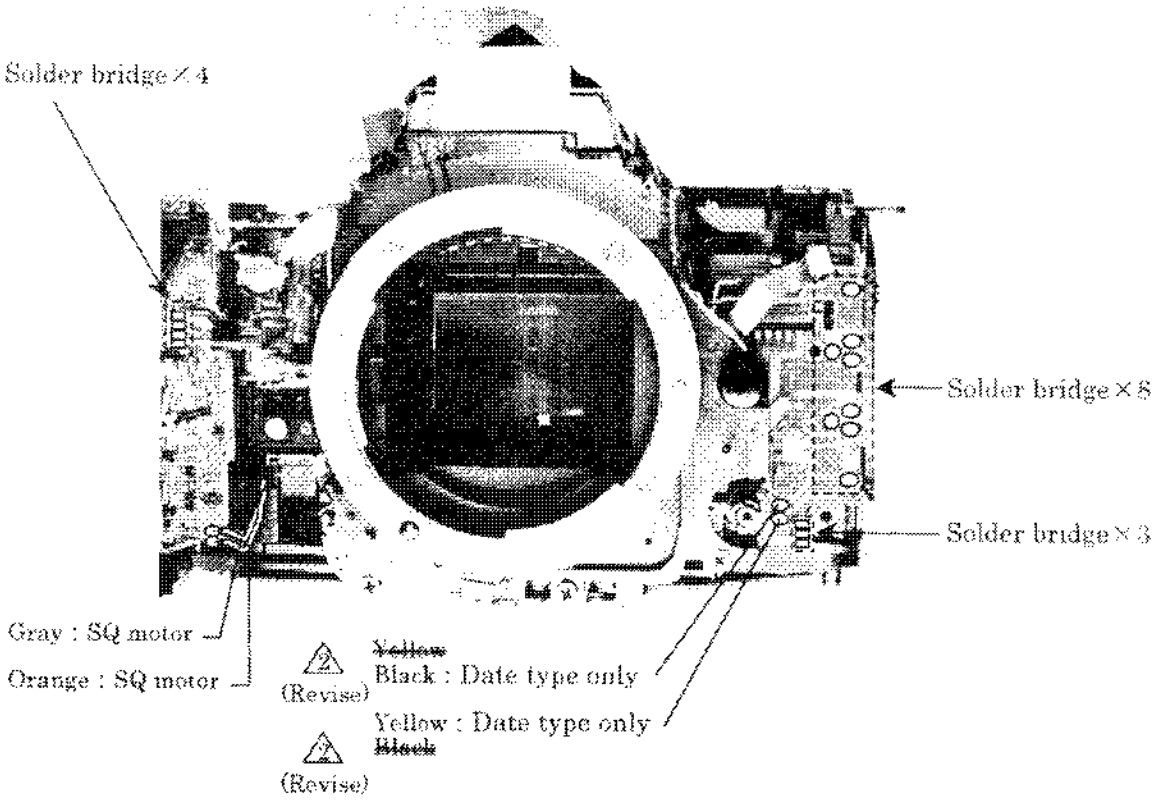
1. Removal each wires and solder bridges

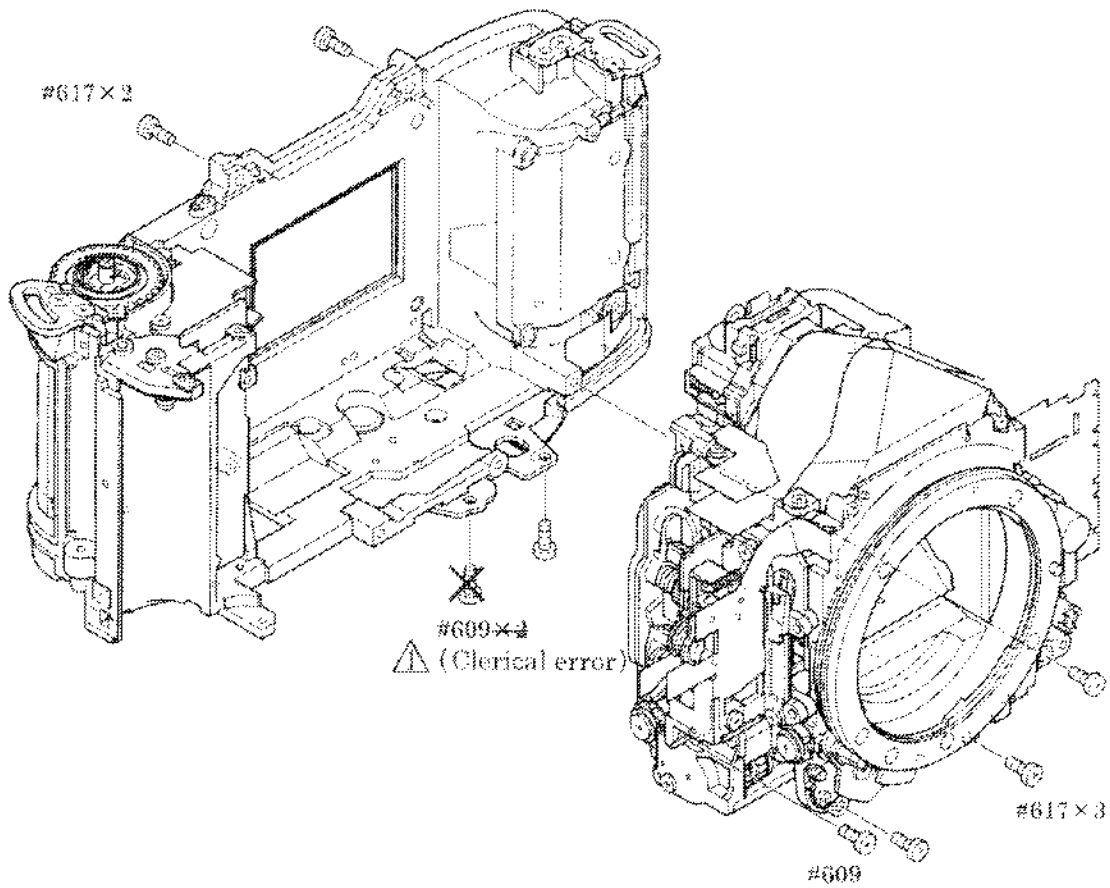

Orange : SQ motor
Gray : SQ motor
Insert a piece of the cardboard between the FPC and the prism before removing the 3 wires.
Solder bridge × 10
Orange : PR unit
Brown : PR unit
Green : PR unit
⚠ (Revise)
Blue
Red : Film advance motor
Blue : Film advance motor
Red
⚠ (Revise)

2. Removal of screws and FPC from connector



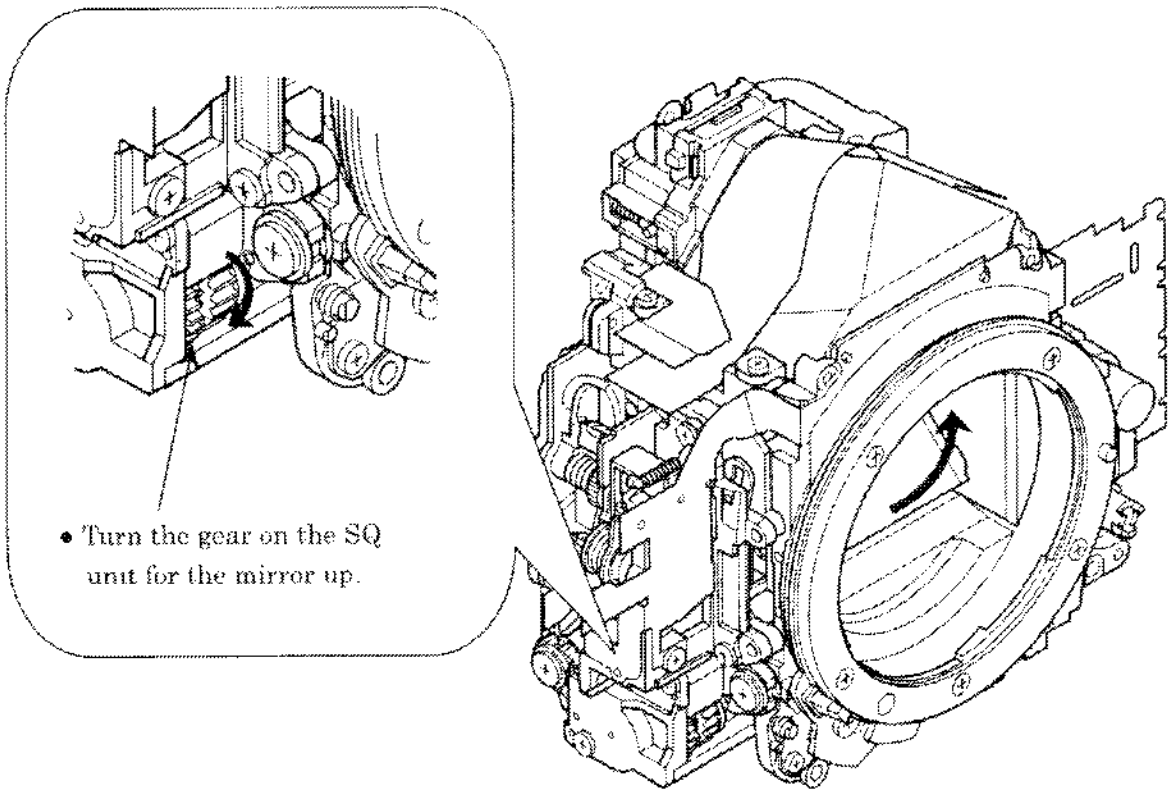
SEPARATION OF THE FRONT AND REAR BODIES

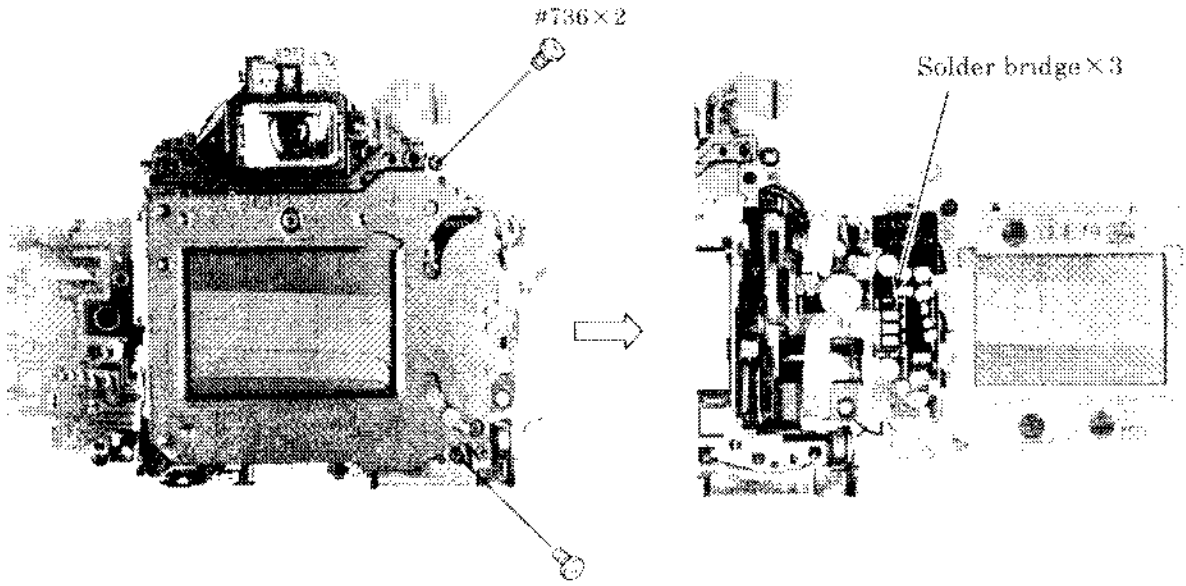




2. FRONT BODY

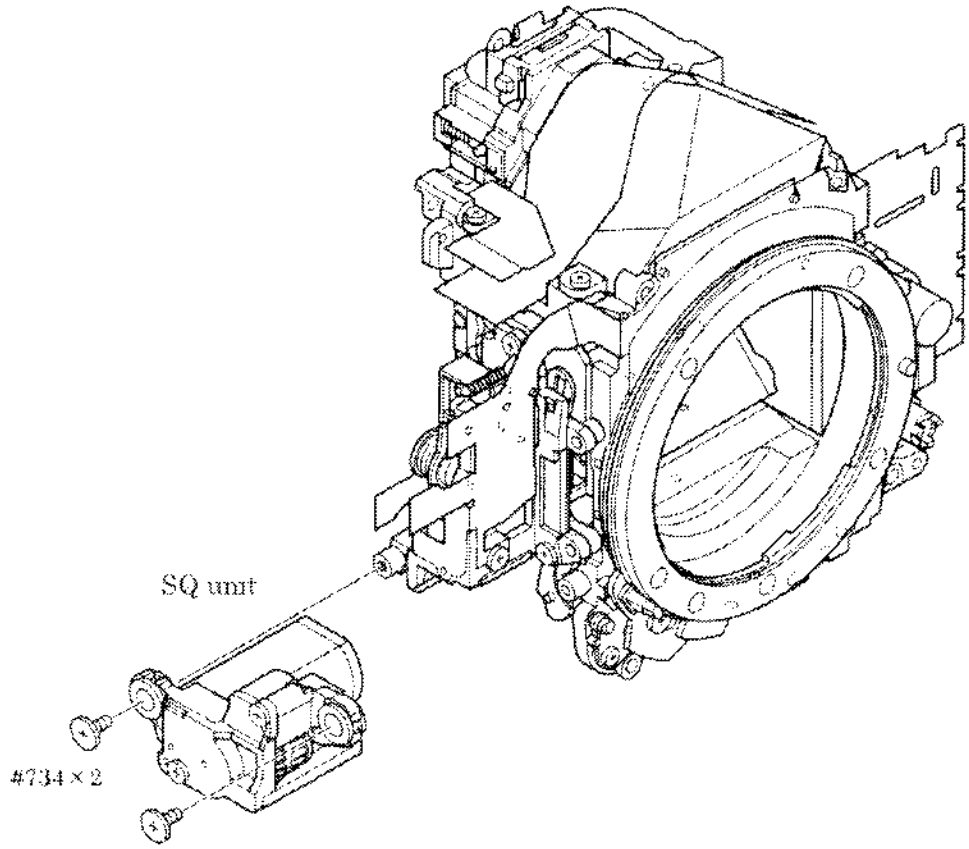
SHUTTER





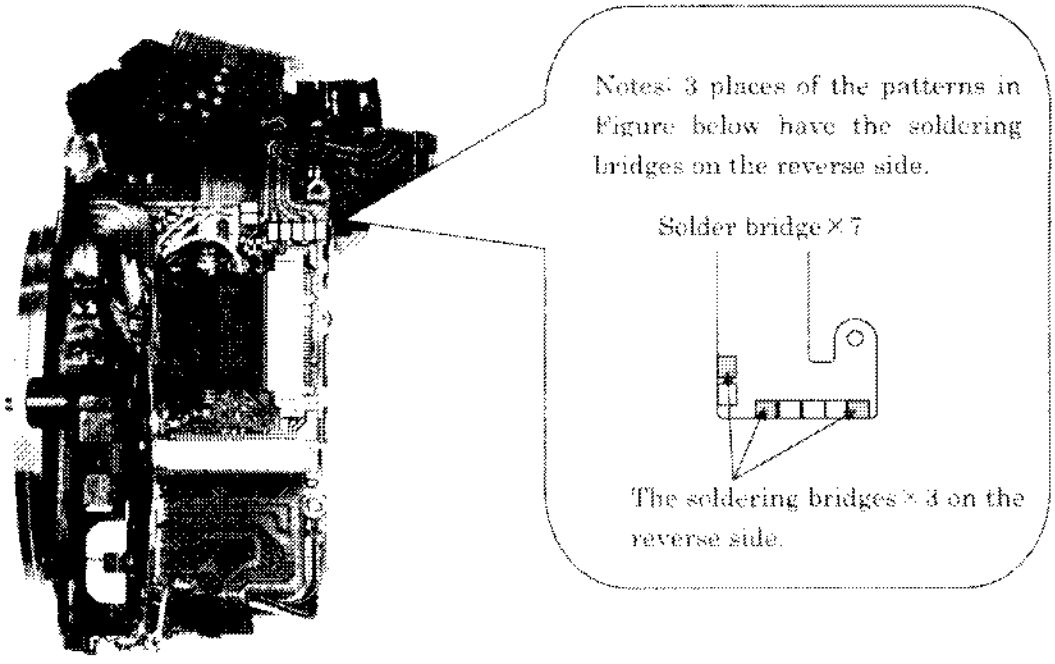
• Rotate the above SQ gear more to make the mirror down after removing the shutter.

SQ UNIT

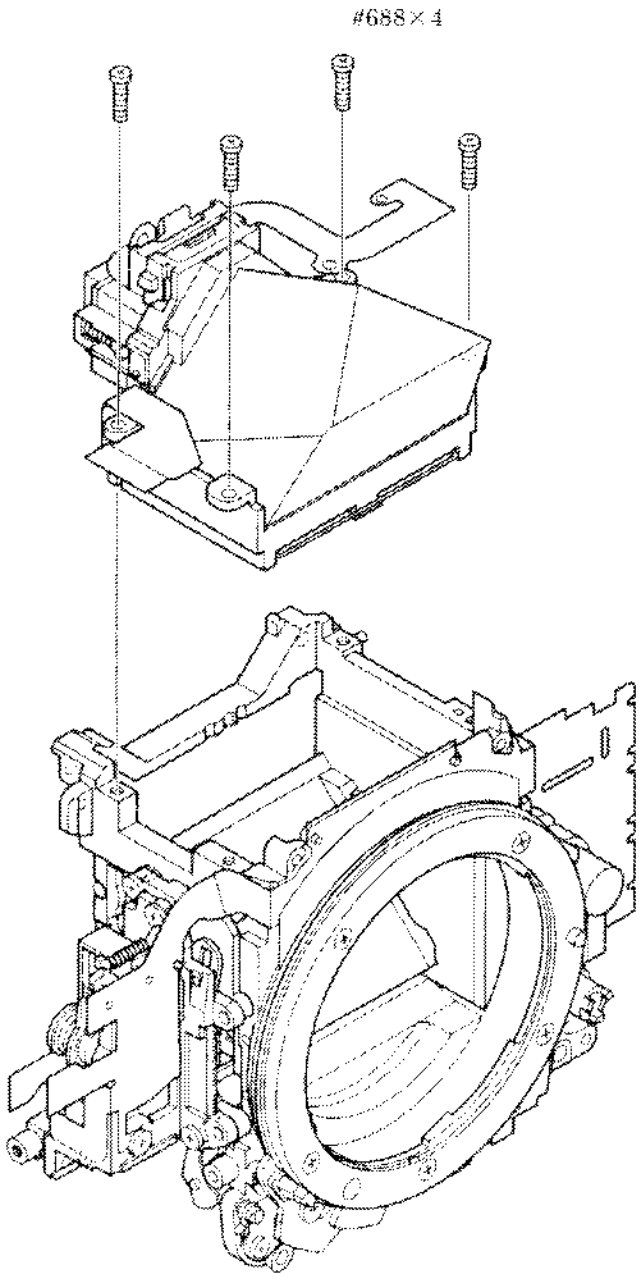


PRISM BOX UNIT

1. Removal of solder bridges on the metering FPC

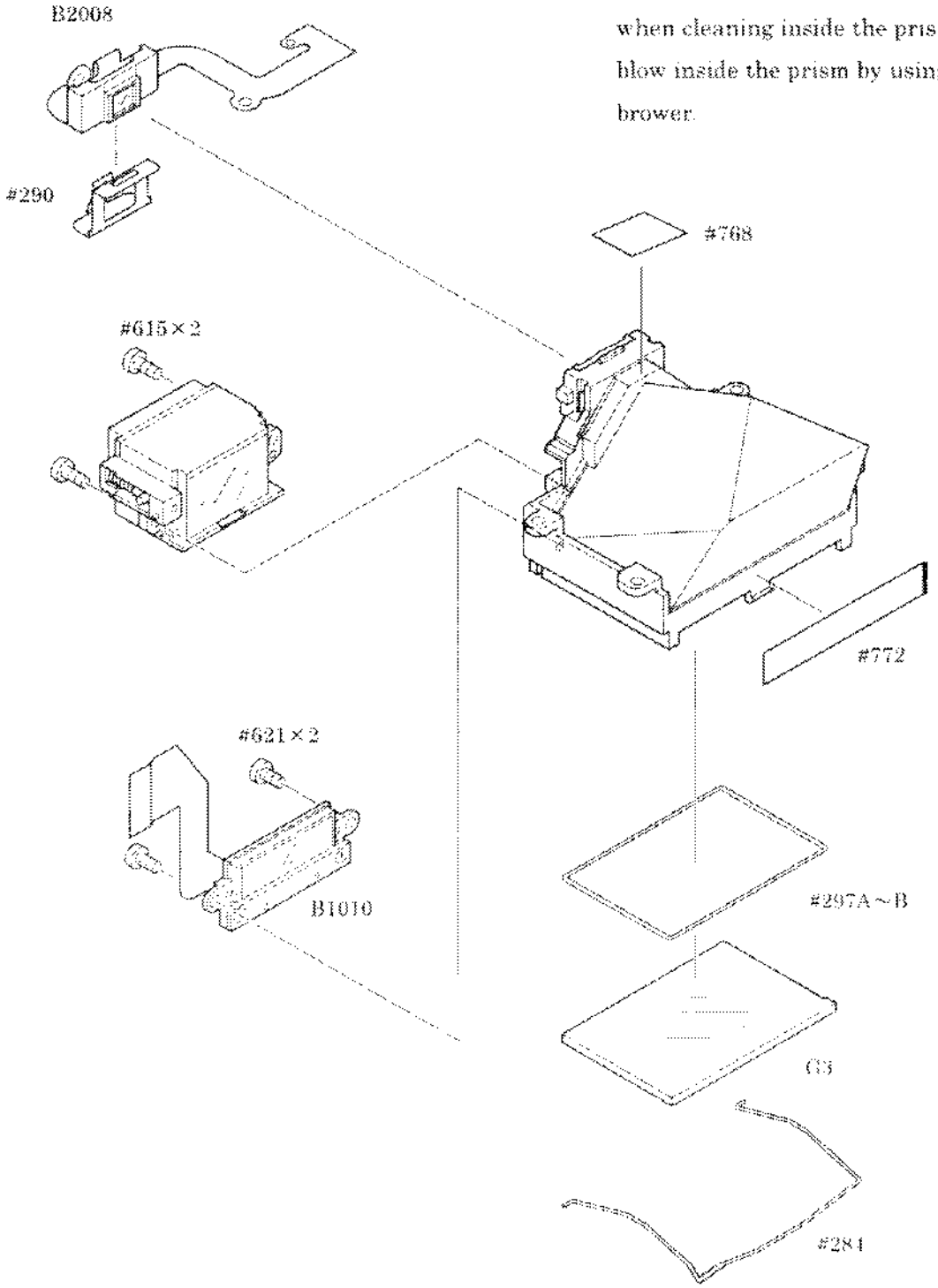

Notes: 3 places of the patterns in Figure below have the soldering bridges on the reverse side.
Solder bridge × 7
The soldering bridges × 3 on the reverse side.

2. Removal of Prism box unit from the Front body

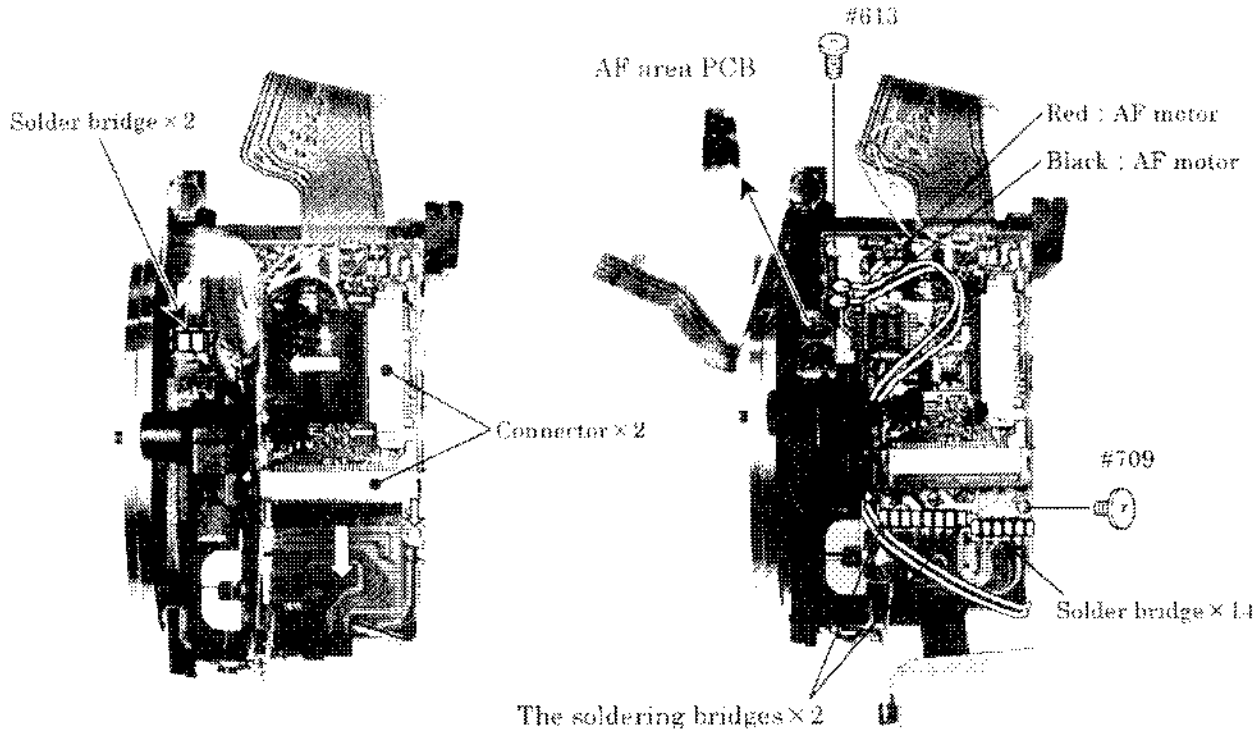


3. Disassembling of the Prism box unit

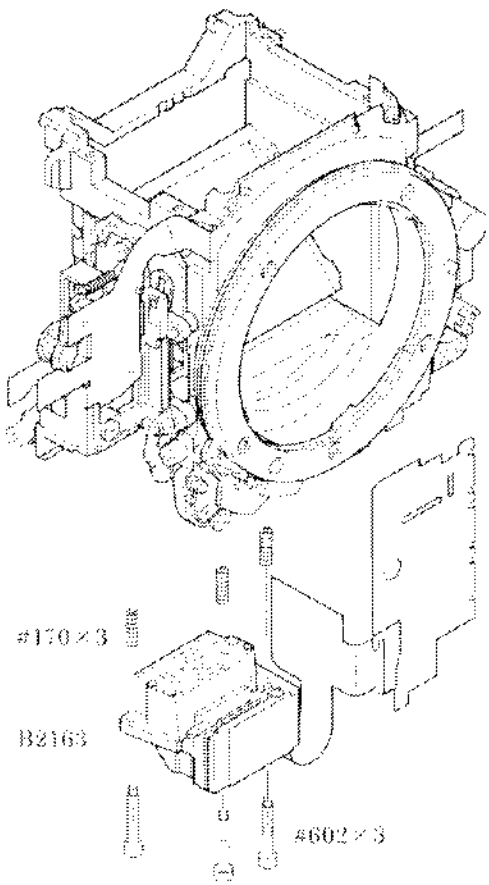
Notes) Since the prism of this camera is plastic hollow type, when cleaning inside the prism, blow inside the prism by using the brower.



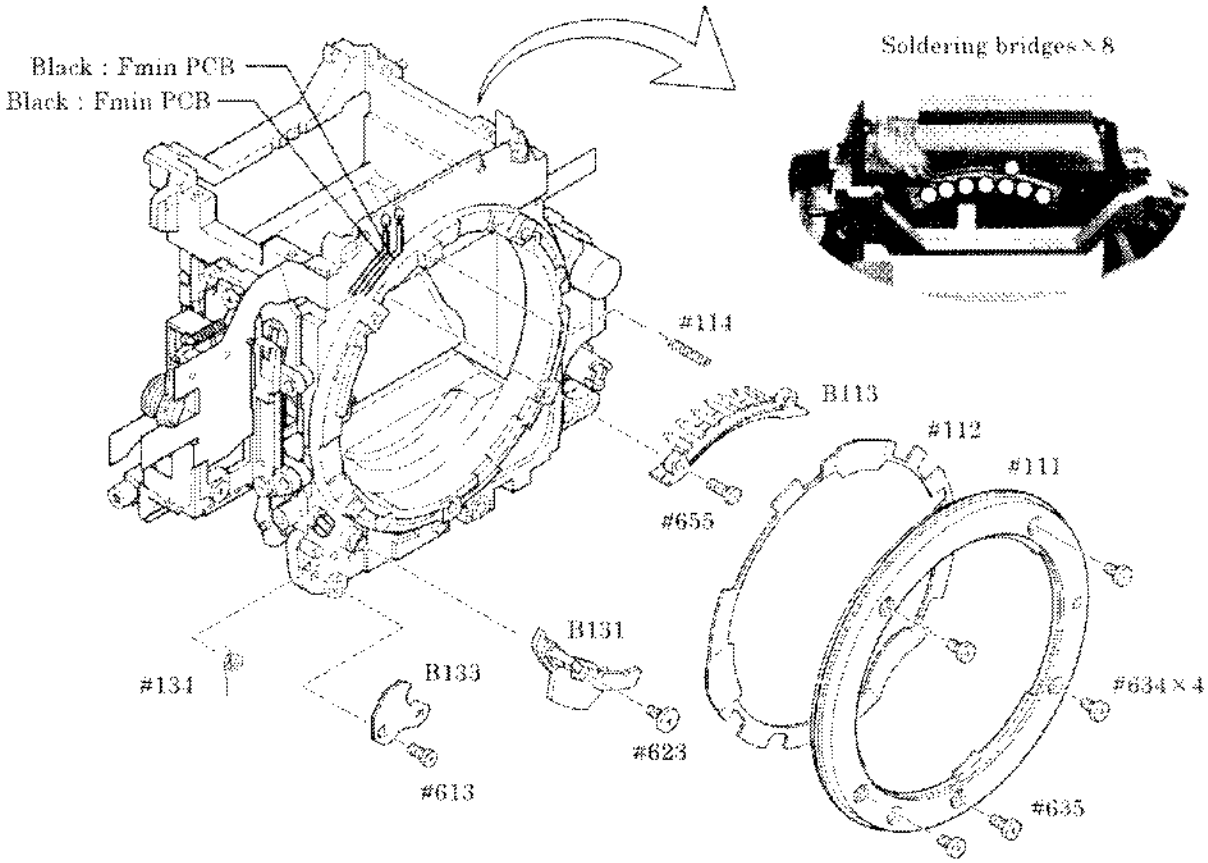
MAIN PCB



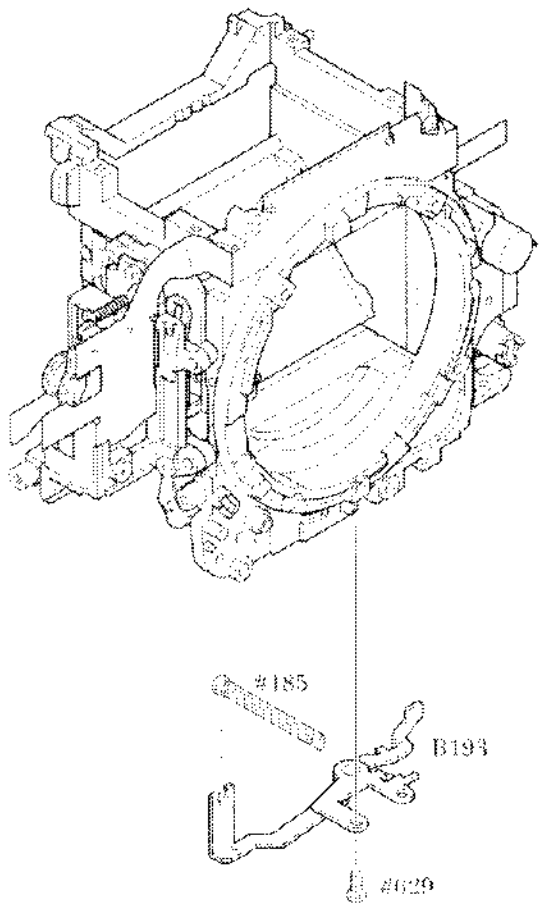
AF SENSOR UNIT



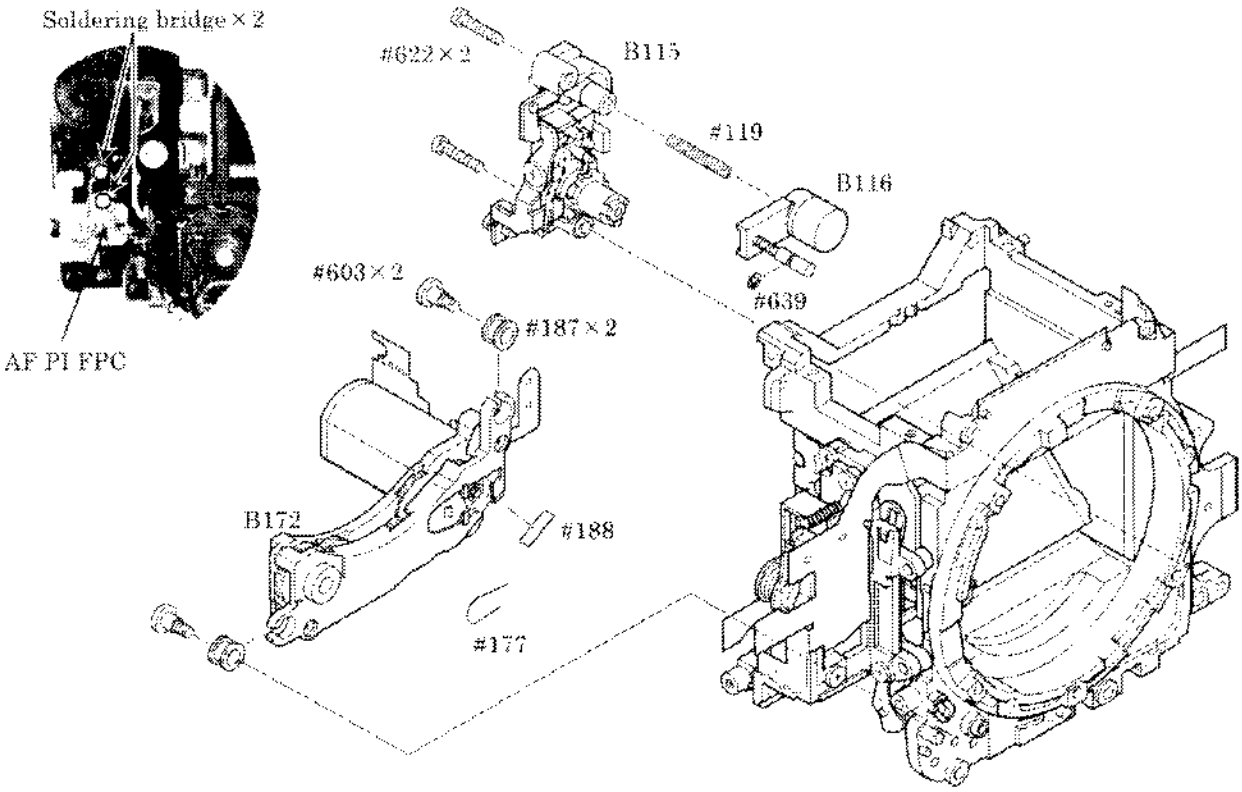
BAYONET MOUNT



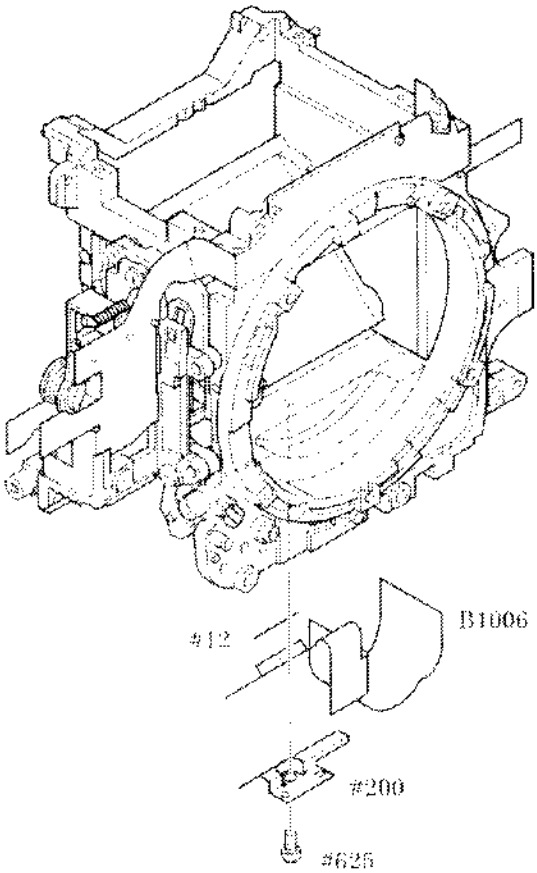
HORIZONTAL AF LEVER UNIT



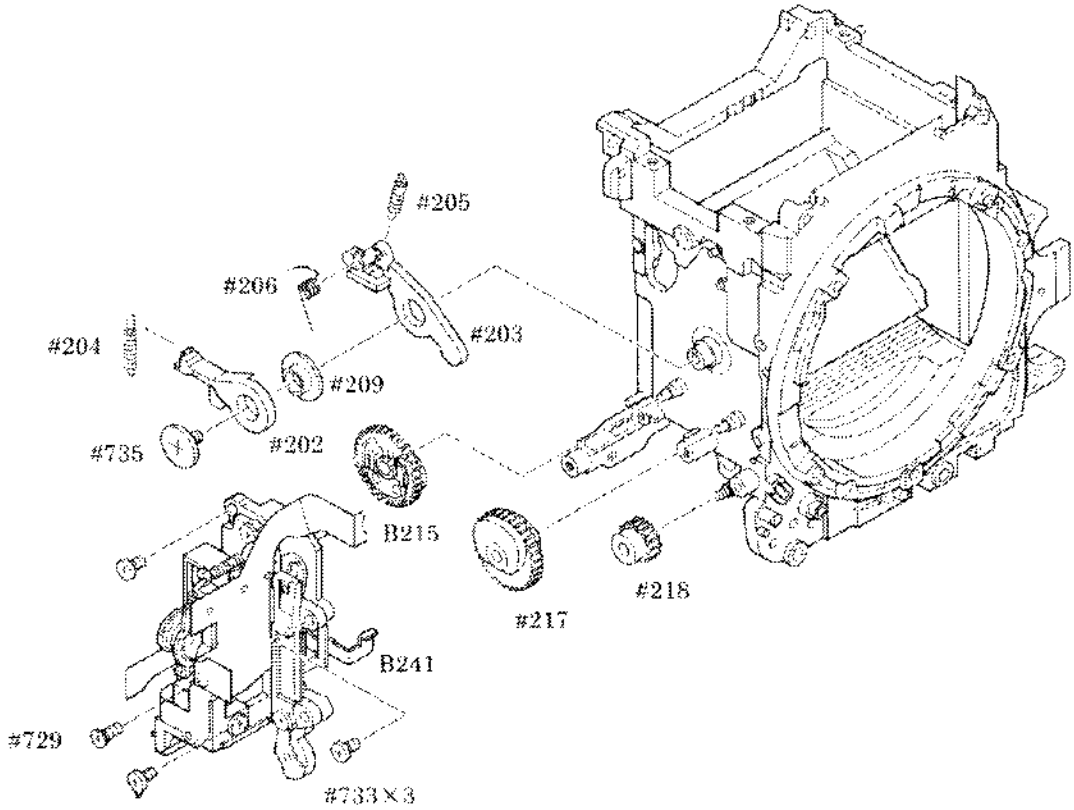
AM SWITCH UNIT, AF DRIVING UNIT



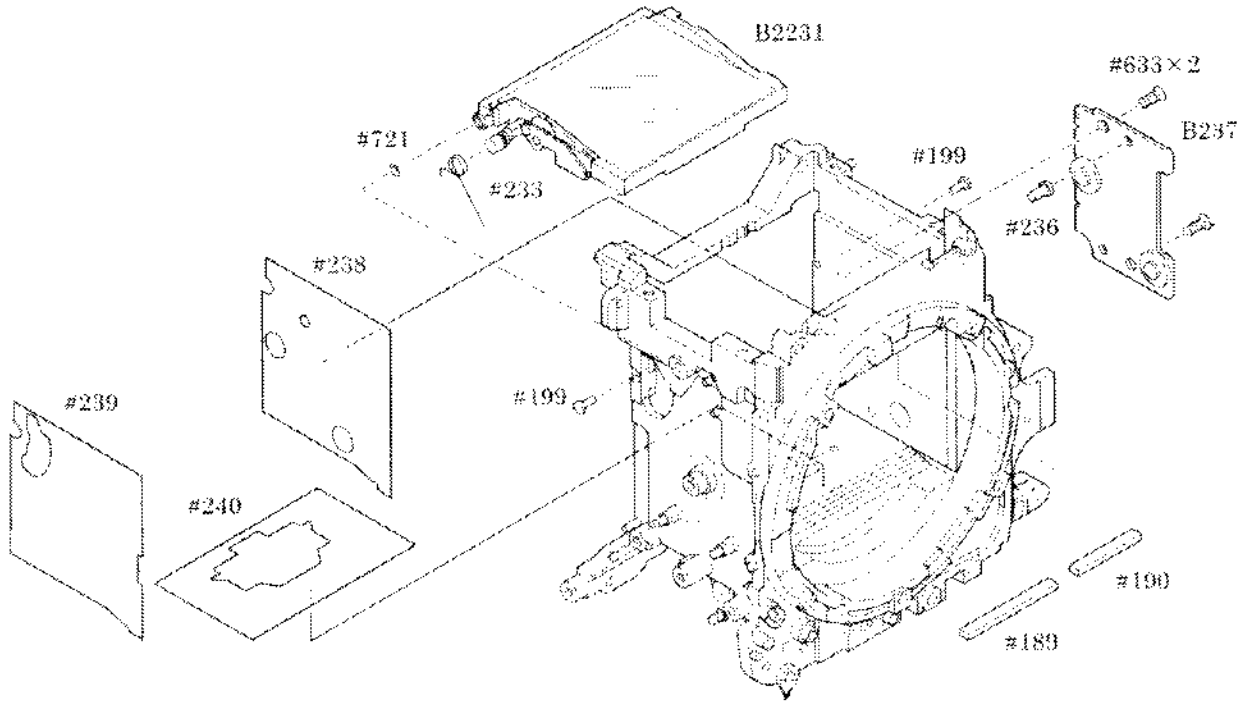
TTL FPC UNIT



APERTURE CONTROL BASE PLATE

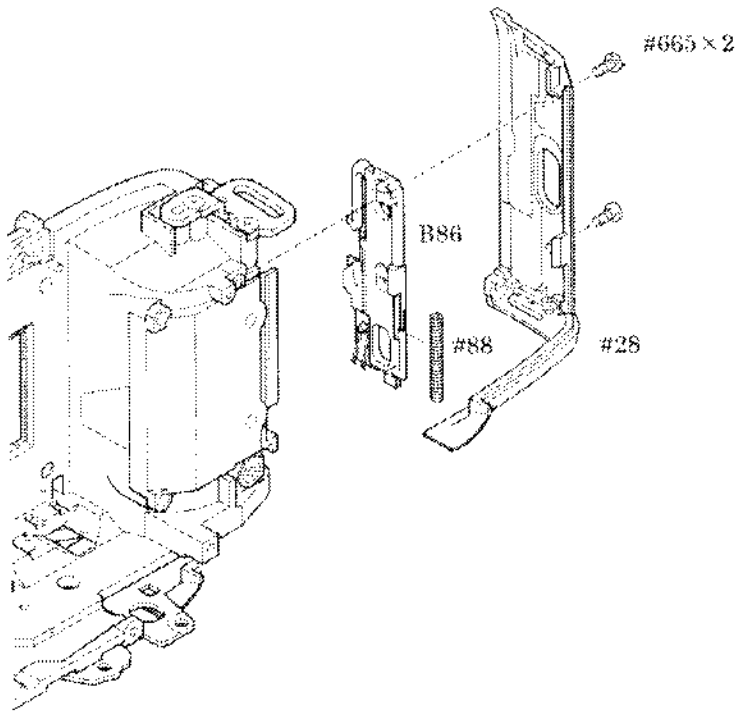


MIRROR HOLDER

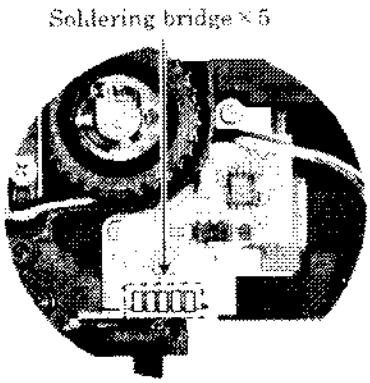


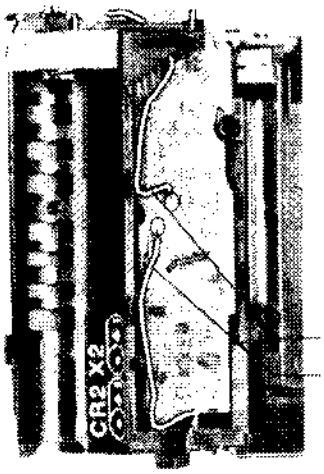
3. REAR BODY

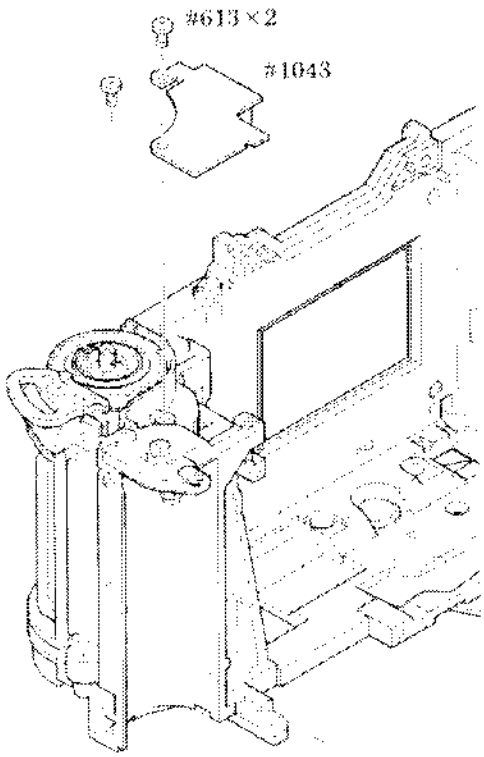
BACK DOOR OPEN/CLOSE AREA



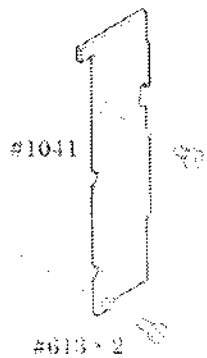
DC/DC UNIT, SB UNIT



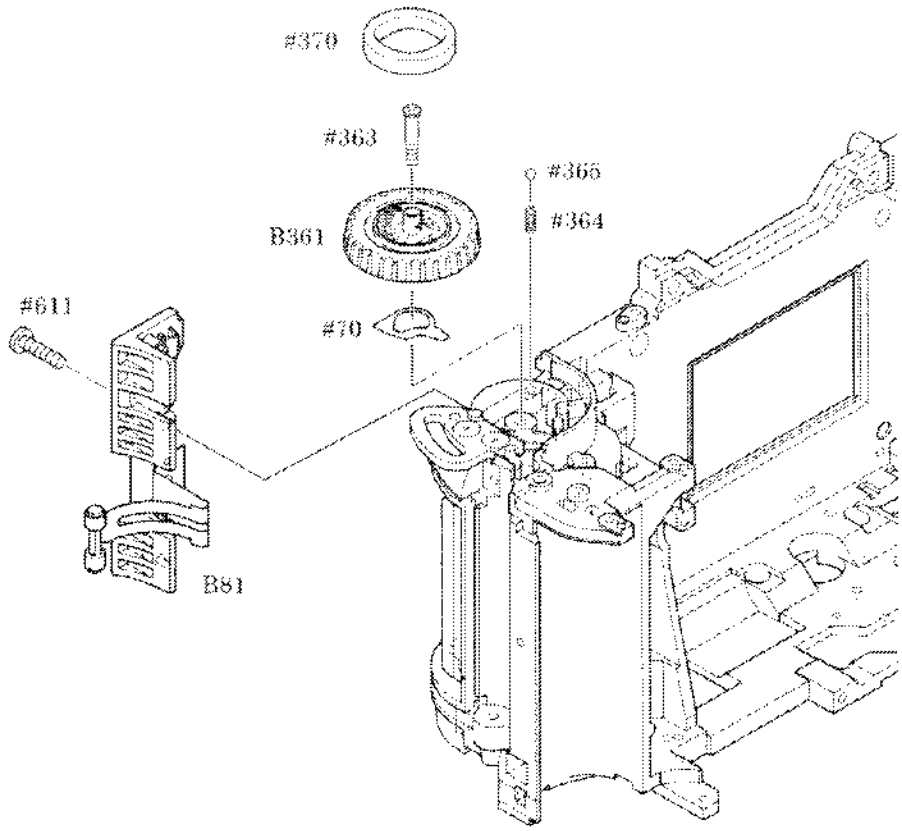




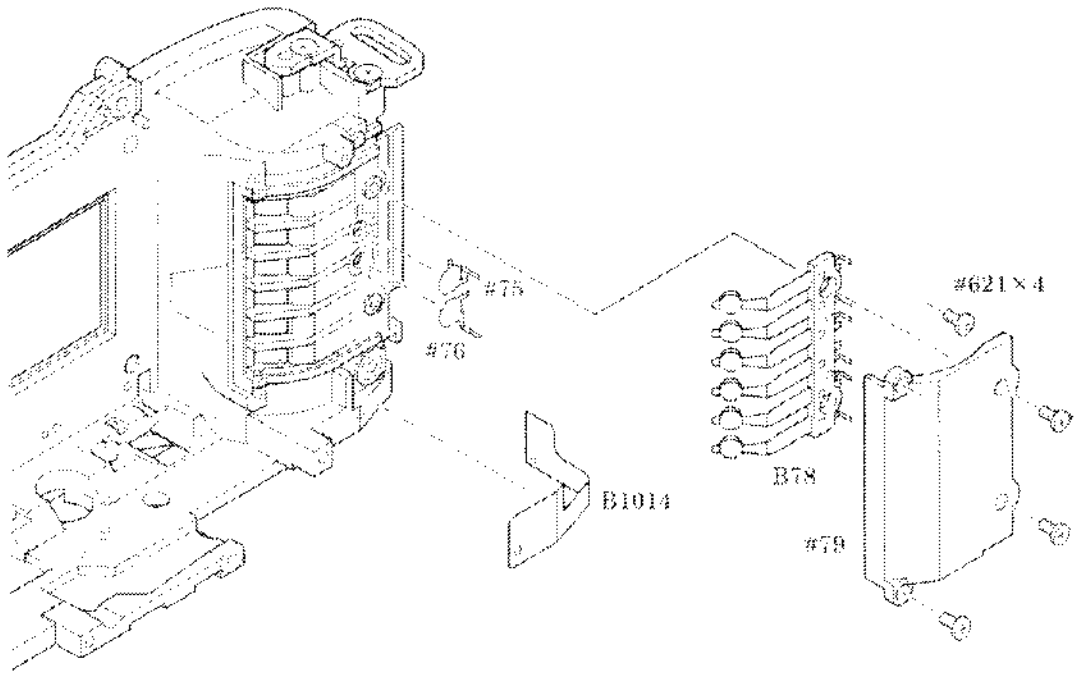
Black : Battery contact
Red : Battery contact



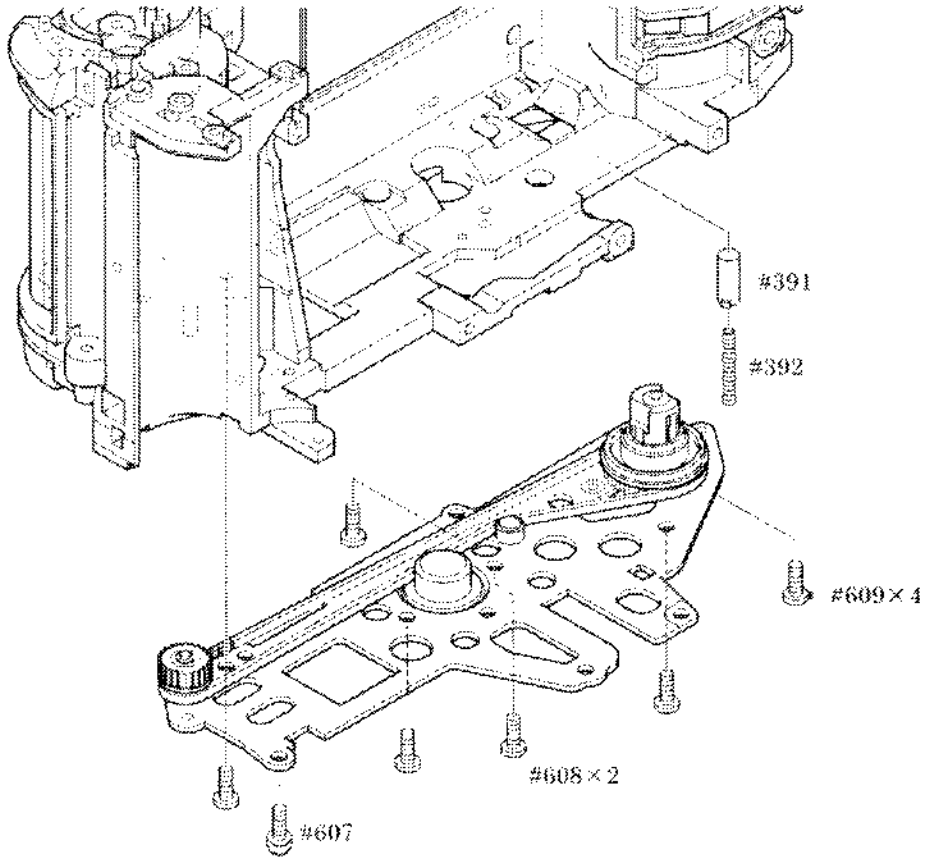
COMMAND DIAL, PR BASE PLATE UNIT



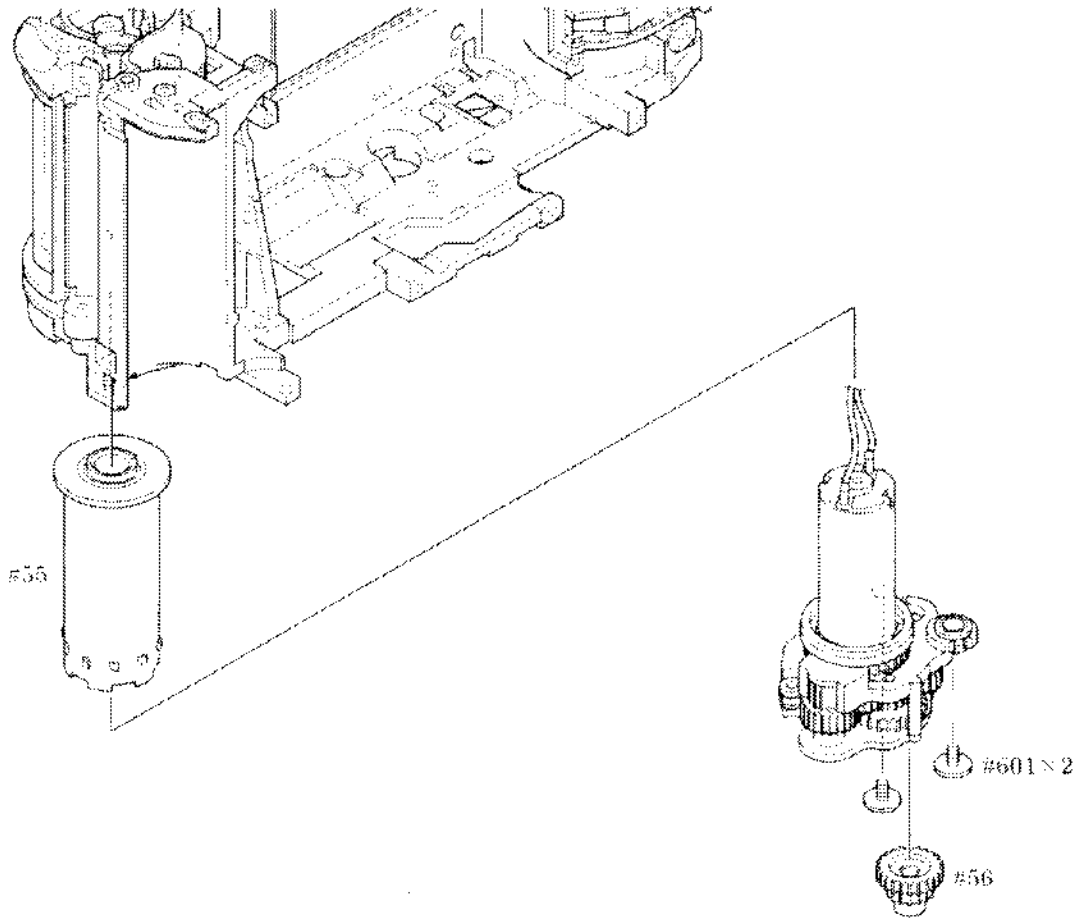
DX CONTACT



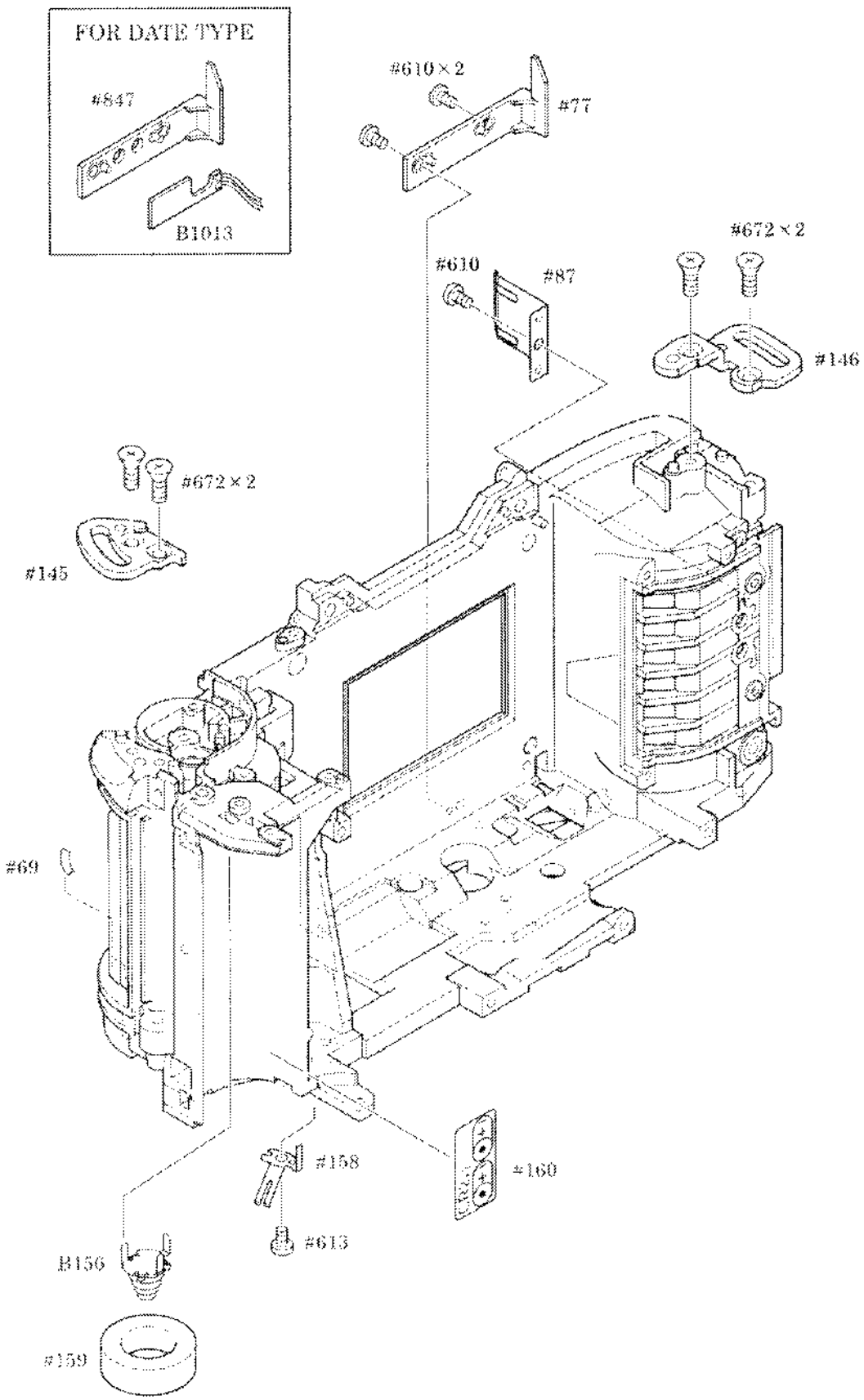
BOTTOM BASE PLATE



FILM ADVANCE UNIT



SMALL PARTS OF REAR BODY



ASSEMBLY AND ADJUSTMENT

1. FRONT BODY

MIRROR HOLDER ····· A 1

MIRROR UP LEVER ····· A 2

APERTURE CONTROL UNIT

1. Assembly of Aperture Upper and Lower Base Plates ····· A 3

2. Aperture Lever Installation ····· A 4

3. Hook the spring ····· A 4

4. Adjustment for the aperture Mg position ····· A 5

5. Installation of the Aperture Control unit on the Front Body ····· A 6

TTL FPC UNIT ····· A 6

AF DRIVING UNIT, AM SWITCH UNIT ····· A 7

HORIZONTAL AF LEVER UNIT ····· A 7

BAYONET MOUNT ····· A 8

HIGHT ADJUSTMENT OF AF COUPLING SHAFT #185 ····· A 9

ADJUSTMENT OF APERTURE LEVER POSITION ····· A 9

AF SENSOR UNIT ····· A 10

MAIN PCB ····· A 10

PRISM BOX UNIT

1. Assemble of Prism box section ····· A 11

2. Mount prism box on front body ····· A 12

3. Soldering bridges on the metering FPC ····· A 12

ANGLE ADJUSTMENT OF MAIN MIRROR AND SUB MIRROR TO 45° ····· A 13

ADJUSTMENT OF INFINITY (∞) ····· A 14

AF SPD POSITION ADJUSTMENT ····· A 14

SQ UNIT ····· A 15

SHUTTER

1. Mirror up ····· A 15

2. Mount the Shutter unit to Front body ····· A 16

2. REAR BODY

SMALL PARTS OF REAR BODY ····· A 16

FILM ADVANCE UNIT

1. Assembling of each gear ····· A 17

2. Mount the Film Advance Unit to the Rear Body ····· A 17

BOTTOM BASE PLATE ····· A 18

DX CONTACT A18
COMMAND DIAL, PR BASE PLATE UNIT A19
SB UNIT, DC/DC UNIT A19
BACK DOOR OPEN/CLOSE AREA A20

3. MOUNTING BOTH THE FRONT AND THE REAR BODIES

MOUNT THE FRONT BODY TO THE REAR BODY A20
LCD DISPLAY UNIT
1. Connector, Mount of screw(s) A21
2. Connector, each wires A22
TOP COVER
1. Accessory shoe, Mode dial unit A23
2. SB area, Small parts A24
3. Mount the Top cover to the Body A25
4. Each wires, Soldering bridges A25
GRIP COVER, REWIND SIDE COVER, FRONT COVER A26
INSPECTION & ADJUSTMENT OF BODY BACK A27
ADJUSTMENT THROUGH PC A27
AF ADJUSTMENT A28
BACK DOOR, BOTTOM COVER A29

ASSEMBLY AND ADJUSTMENT

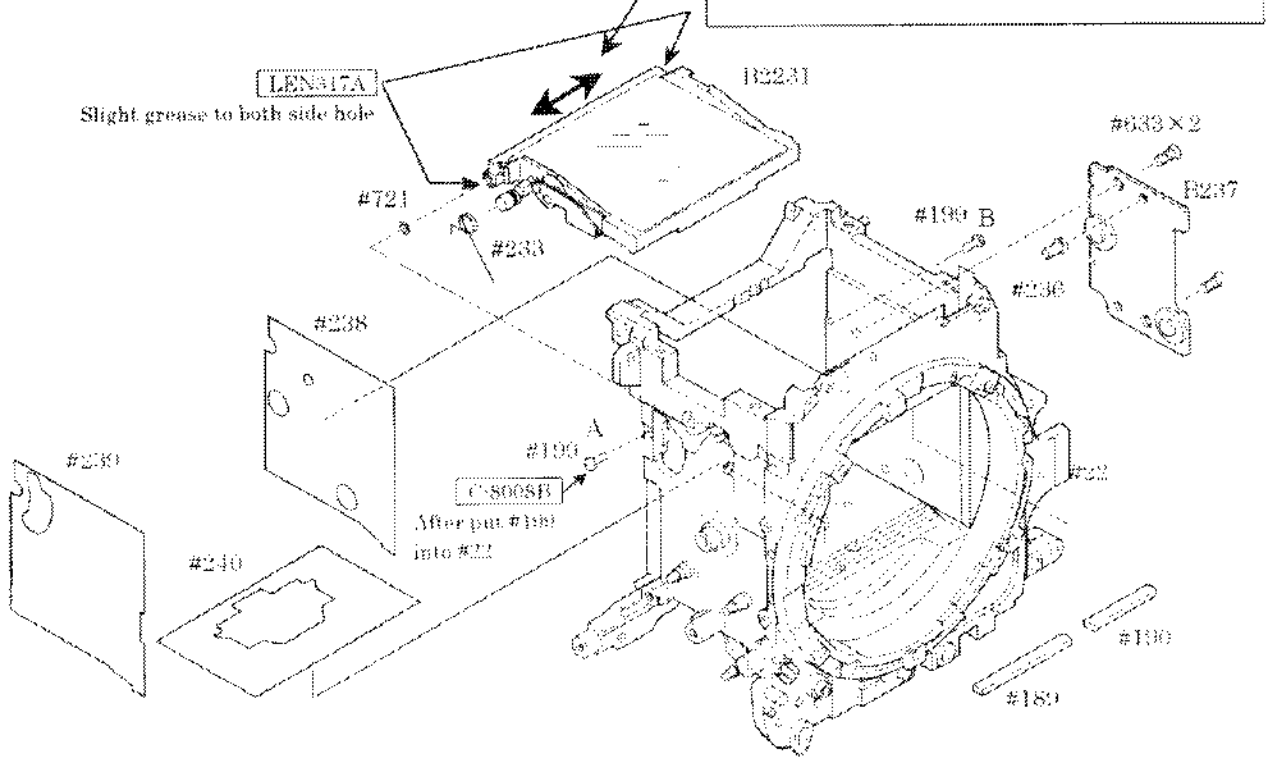
1. FRONT BODY

MIRROR HOLDER

① Affix both flocked paper and mirror receipt mold on the front body #22.
(Extrusion from each side of #22 is not allowed).
② Press the shaft #199 A side into the front body #22 and press 1/3 of the shaft #199 B side into the front body #22.
③ Place the washer #721 through the shaft #199 A side.
④ Assemble the mirror dust cleaner B2231 in the front body #22 aligning it with the shaft #199 A side and press the shaft #199 B side in the body to the end, aligning it with the mirror dust cleaner B2231.

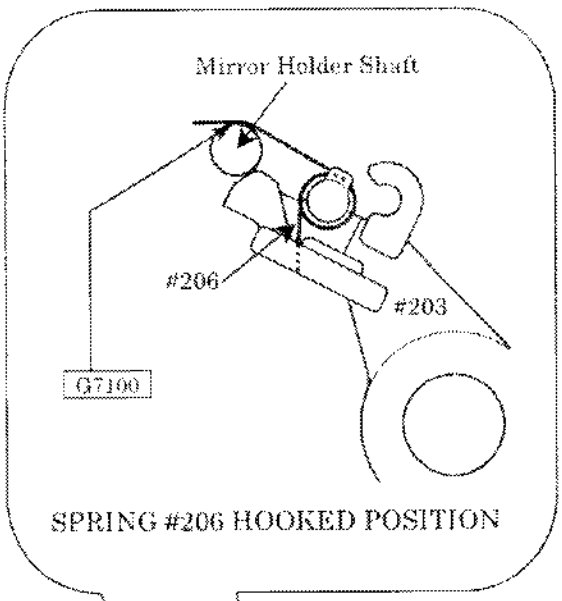
After the mirror dust cleaner is assembled in the front body #22 in step ④ above, check the thrust backlash. If the backlash is outside standard range, replace it by either of three thickness types of the washer #721 and adjust it.

Backlash Standard: 0.02 mm or less (0 is not allowed)



⑤ Stand the mirror up and assemble the sub-mirror deflection pin #236 into the front body #22
⑥ Align the hole on the mirror box PCB B237 with the boss on the front body #22, and assemble and fix them using the screw #633×2.

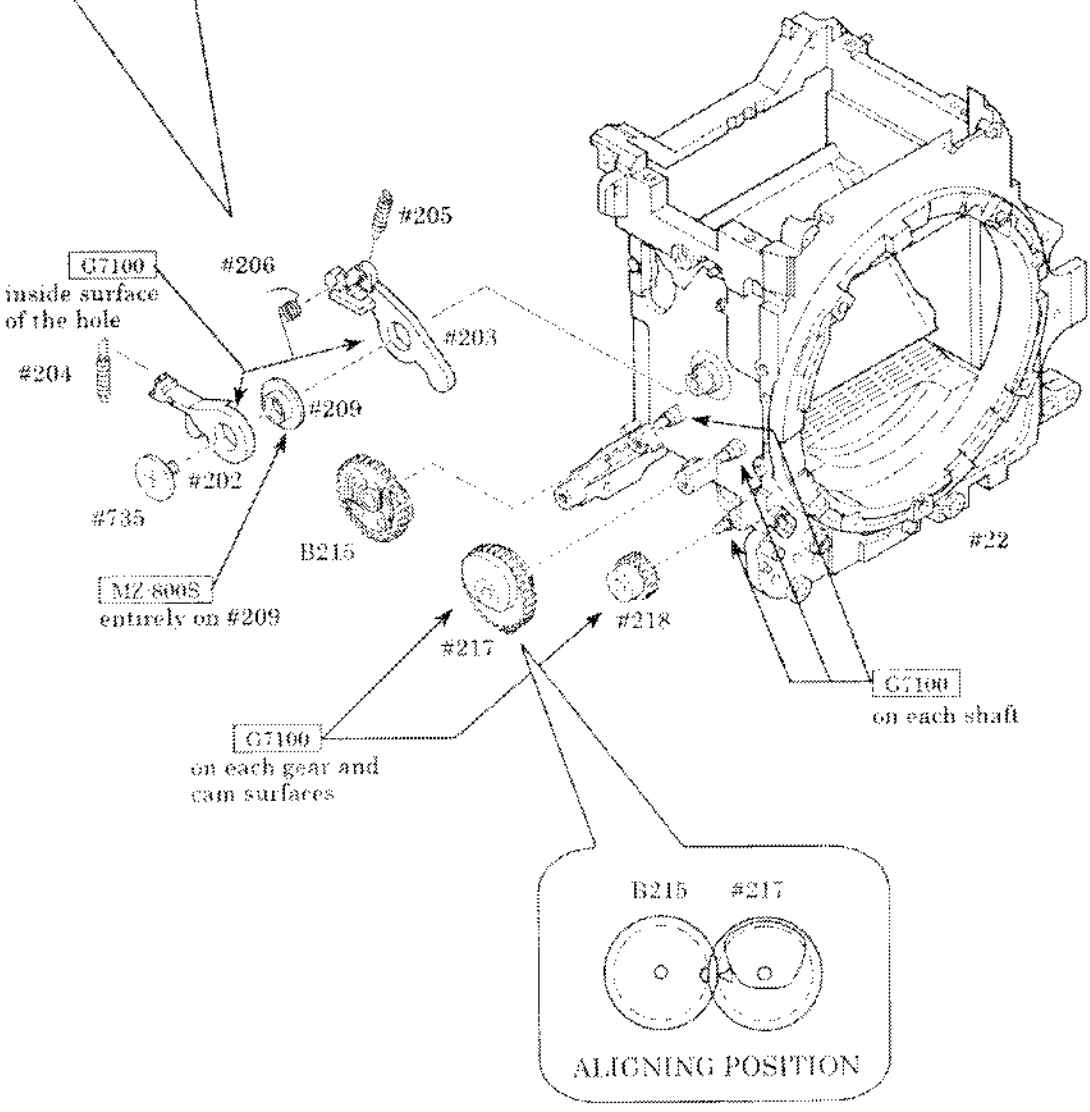
MIRROR UP LEVER



① Assemble the mirror UP levers #203, #209 and #202 on the front body #22 in this order and fix them with screw #735.

② Assemble the SQ shutter charge cam B215, #217 and #218 in the front body #22.

③ Hook the springs #204, #205 and #206 onto each lever.



APERTURE CONTROL UNIT

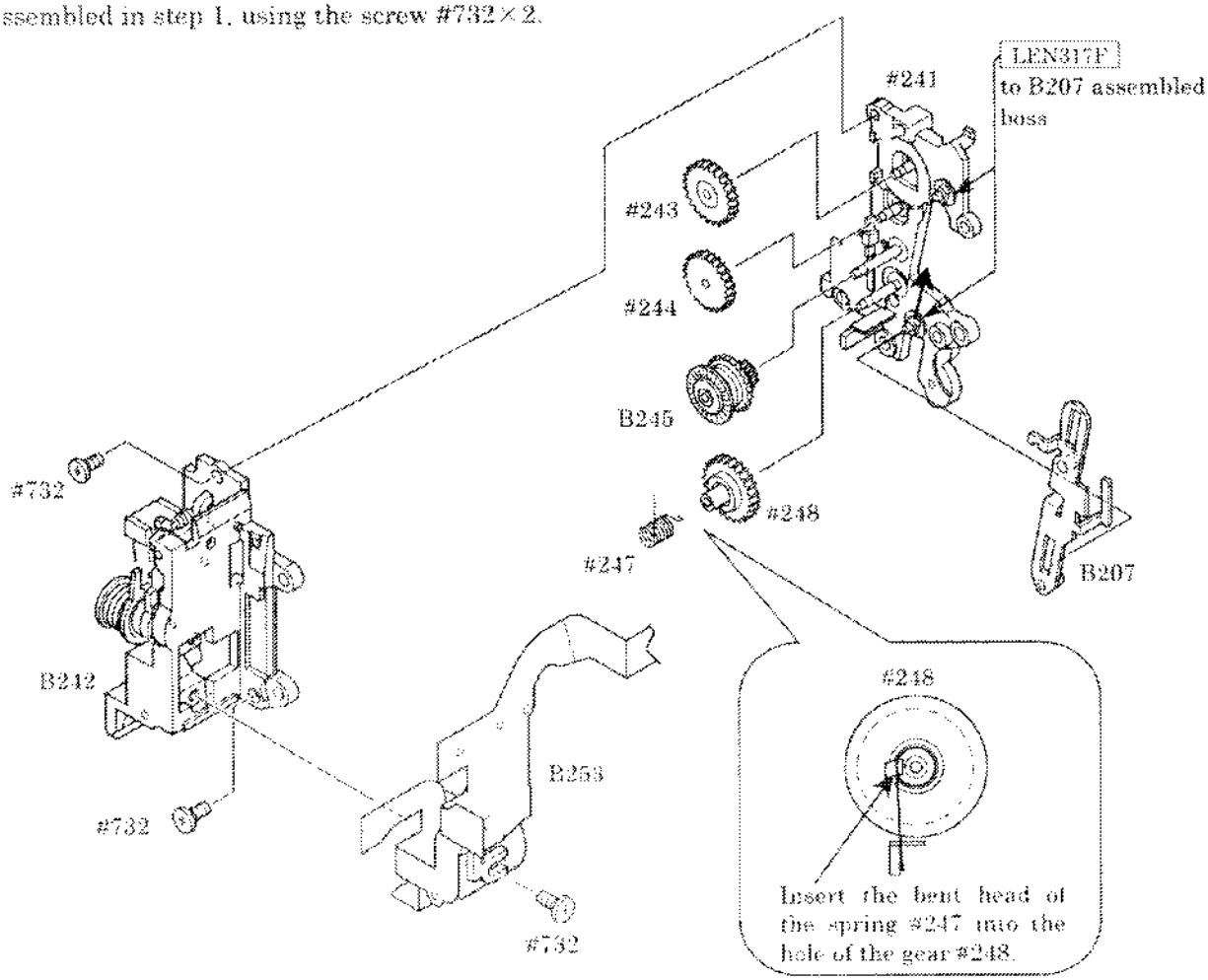
1. Assembly of Aperture Upper and Lower Base plates

① Assemble the gears #243 and #244 and Aperture driving lever B207, gear #248, spring #247 and gear B245 onto the Aperture control lower Base plate #241 in this order.

Note : The Aperture driving gear B242 should be slid to the arrow direction (upper) in advance.

② Attach the Aperture upper base plate on the Aperture control unit #241 which has been assembled in step 1. using the screw #732×2.

● Oil the four gear shafts using "Oil: CFD-005 5H ".



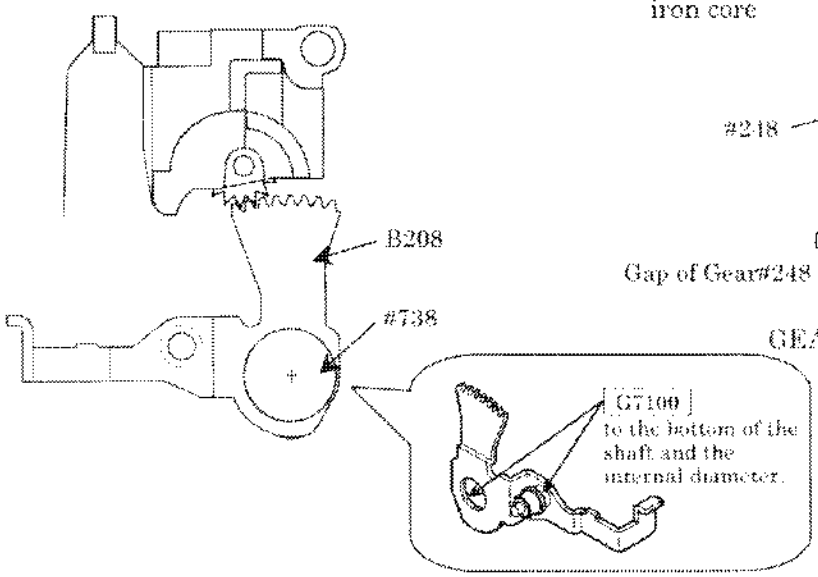
③ Attach the PI base plate unit B253 to the aperture control base unit assembled at Process ② by the both-sided adhesive tape on B253.

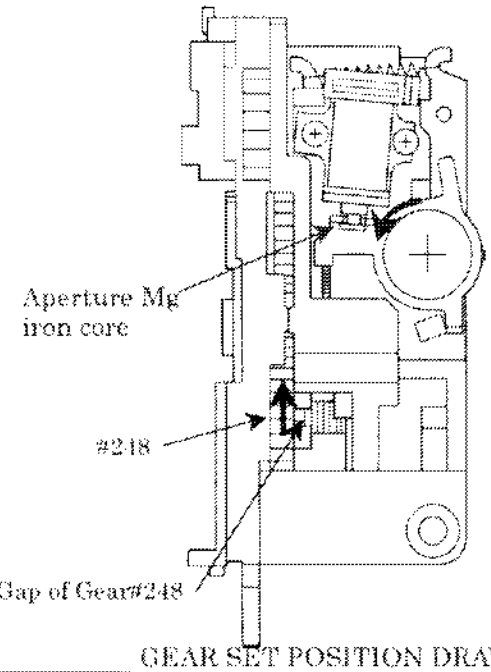
④ Fix the PI section of the Aperture PI FPC unit B253 using the screw #732.

2. Aperture Lever Installation

① Turn the gear #248 to the arrow direction as shown in the Gear Set Position Drawing. Turn one more time after the spring #247 starts working, and stop it when the groove of the gear #248 can be seen. Pull out the Aperture Mg iron core with forceps and fix the aligned gears.

② Attach the Aperture lever B208 at the position as shown in the figure, using the screw #738.



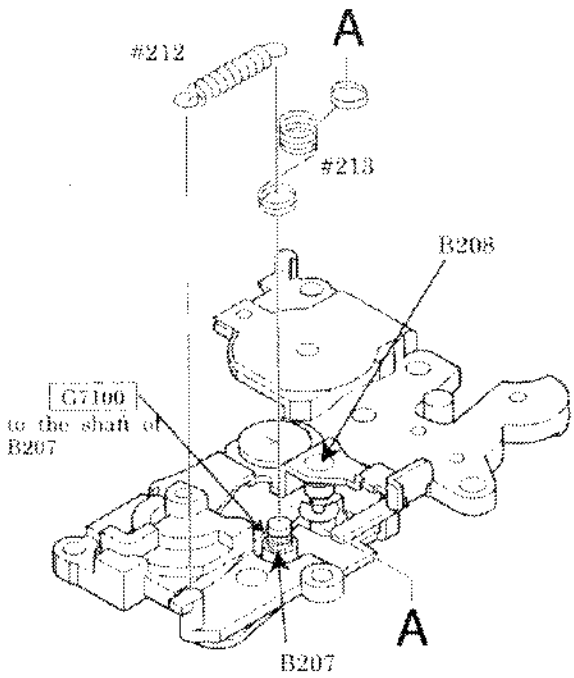


GEAR SET POSITION DRAWING

3. Hook the spring

③ Hook the double wound side of the spring #213 on the column of the Aperture lever B208 and triple wound side of the spring #213 on the column of the Aperture control lever B207.

④ Hook the spring #212 on the position as shown in the figure.

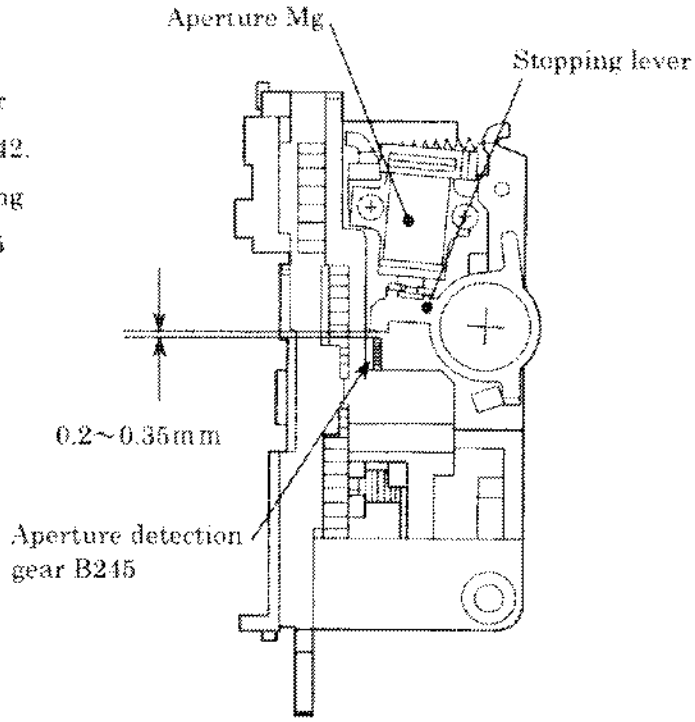


Check: Push down the Mg iron core which has been projected in the procedure of "2. Aperture Lever Installation" and make sure that when the Aperture lever B208 is pushed down with a finger it securely returns to the upward (installed position) when finger is released.

4. Adjustment for the aperture Mg position

• Adjust the aperture Mg position as the following procedure when disassembling or replacing the aperture upper base unit B242. Measure the clearance between the stopping lever and the aperture detection gear B245 and make it be in the standard

STANDARD : 0.2~0.35mm



• Adjustment procedure

Adsorb the iron core of the aperture Mg to the Mg side during the adjustment.

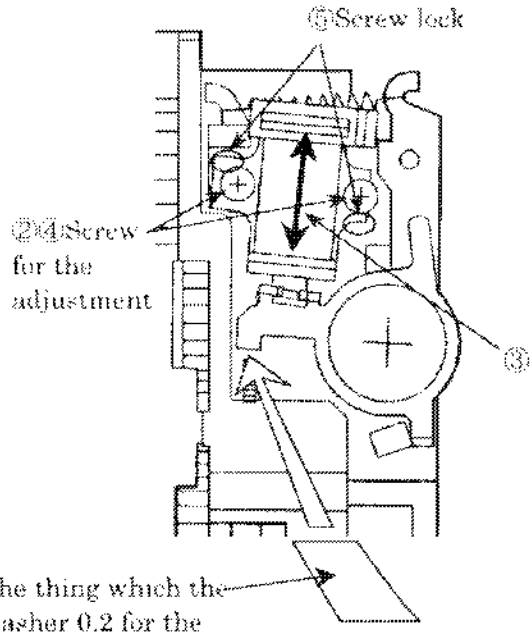
① Put the washer of 0.2 mm into the clearance to be adjusted.

② Loosen the screw for the adjustment.

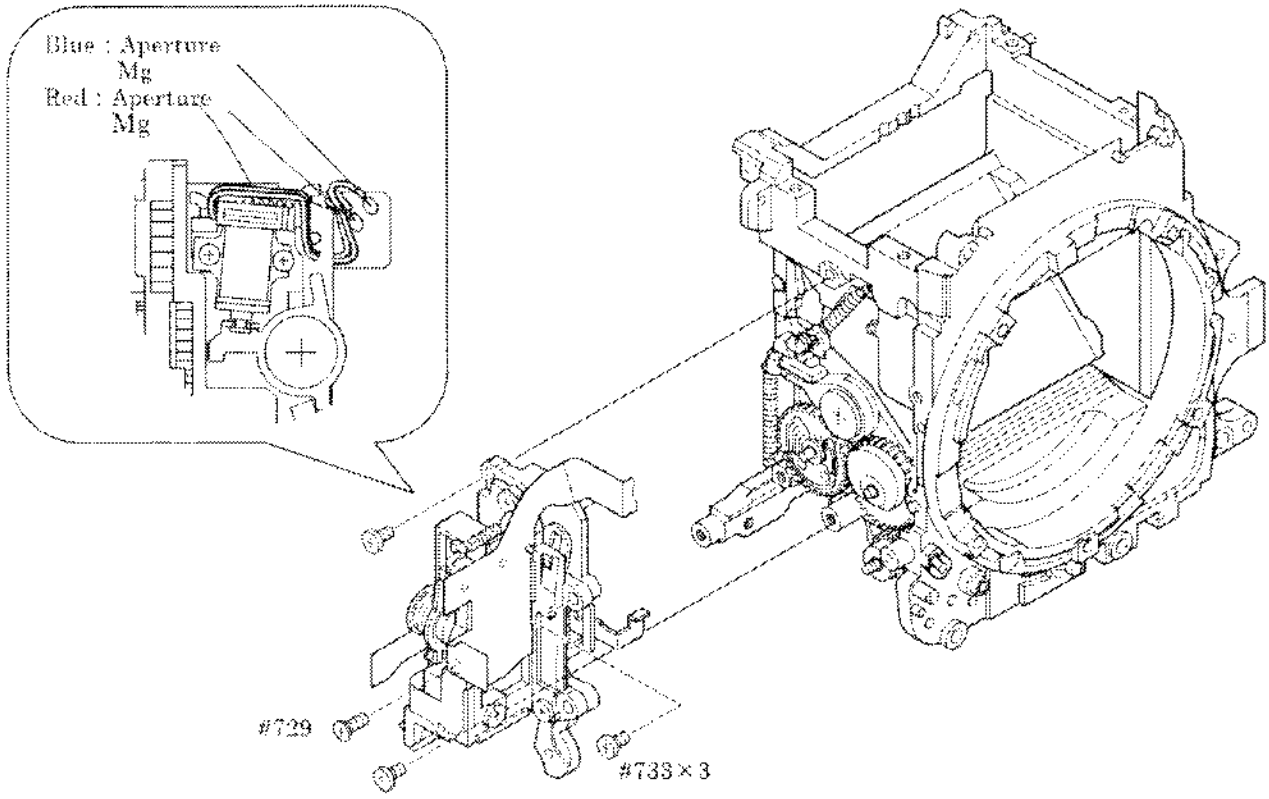
③ Move the aperture Mg to make the above clearance be the same thickness as the washer

④ Drive the screw for the adjustment and fix the aperture Mg.

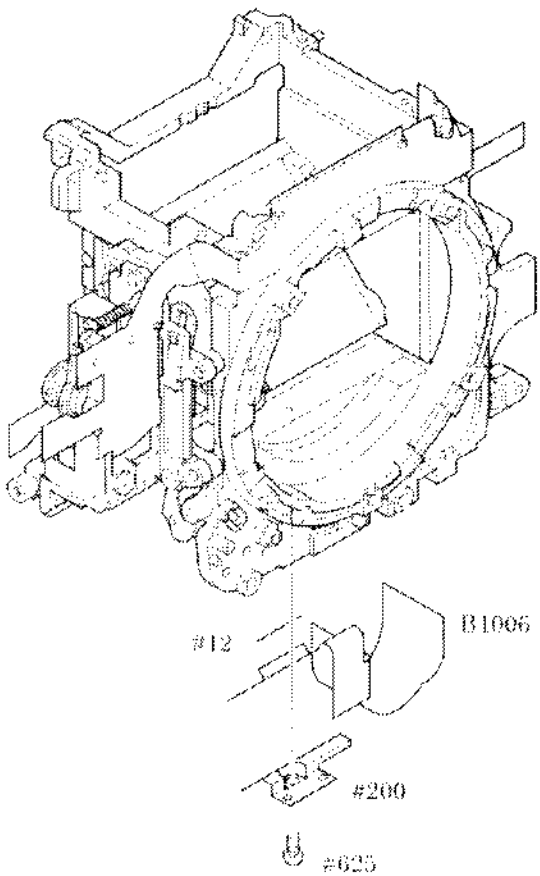
⑤ Fix the Mg by the screw lock.


⑤Screw lock
②④Screw for the adjustment
③
① The thing which the washer 0.2 for the adjustment infinity and so on is cut in the suitable dimension.

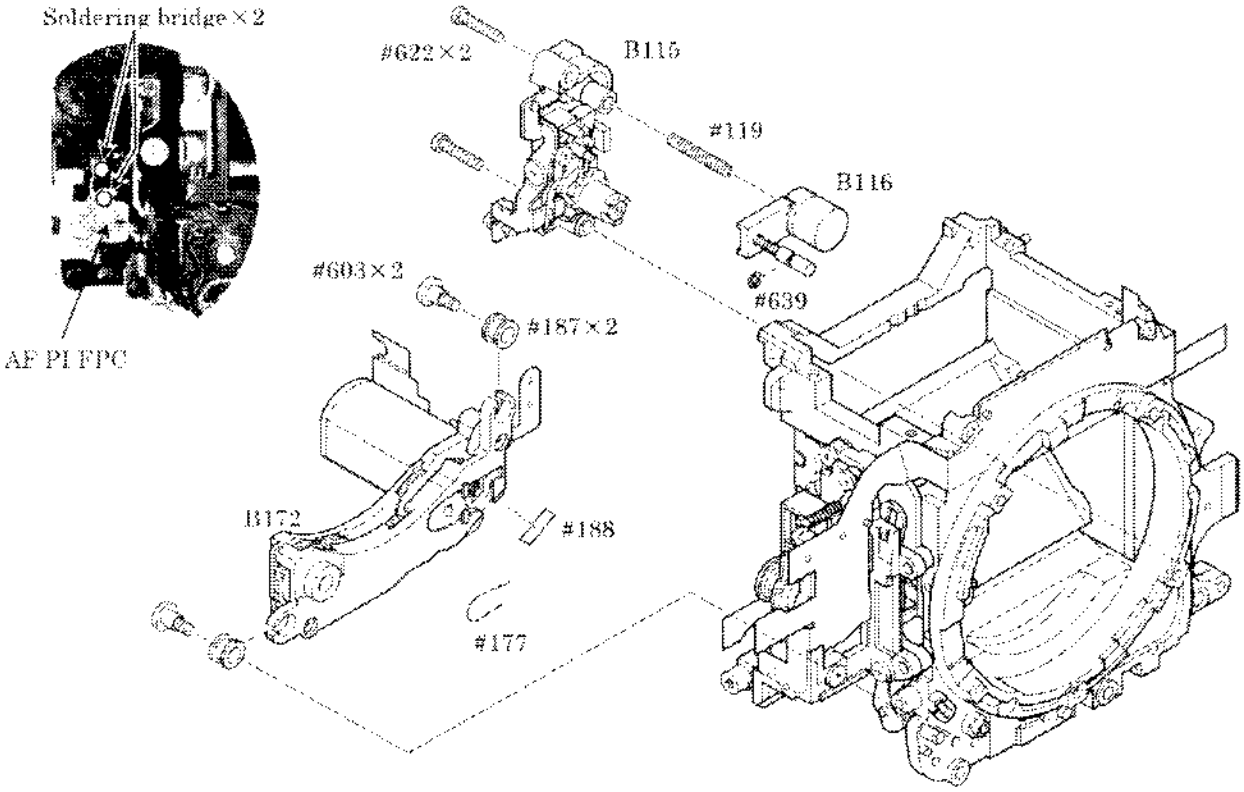
5. Installation of the Aperture Control unit on the Front Body



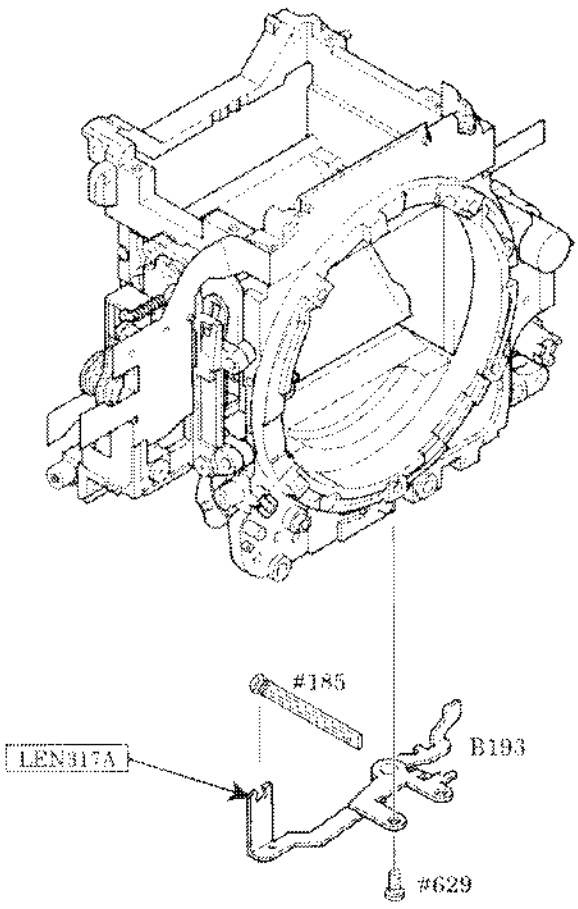
TTL FPC UNIT



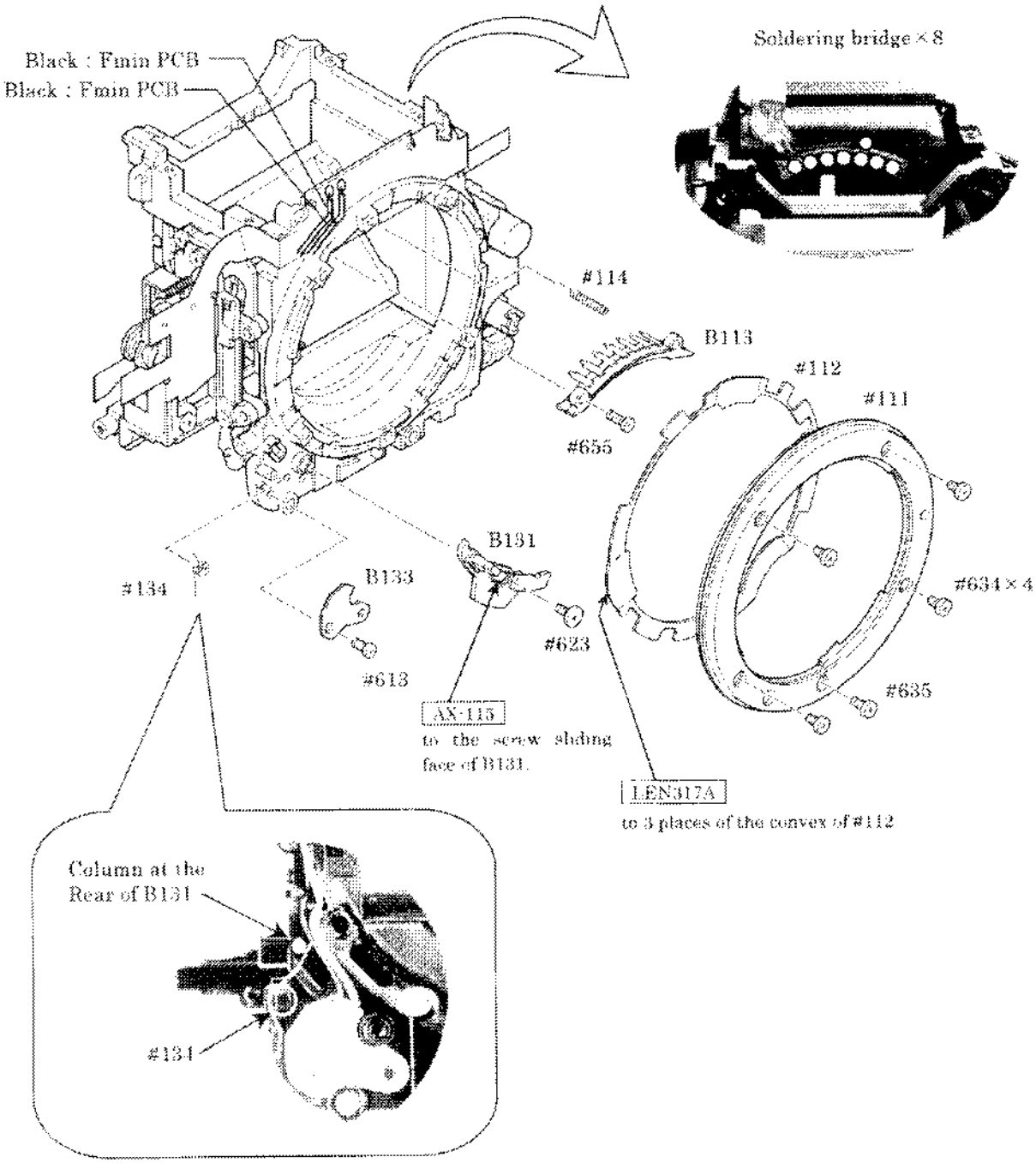
AF DRIVING UNIT, AM SWITCH UNIT



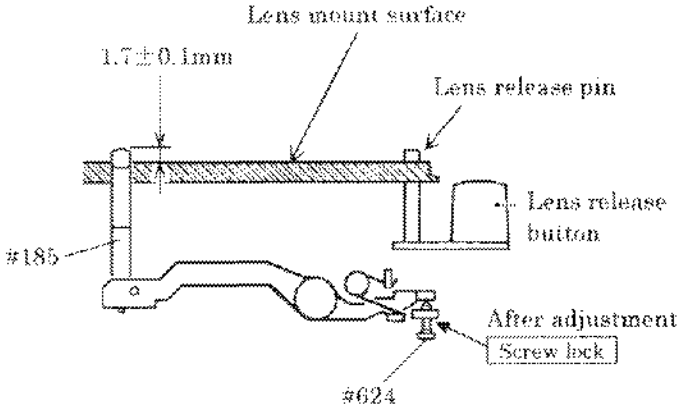
HORIZONTAL AF LEVER UNIT



BAYONET MOUNT



HIGHT ADJUSTMENT OF AF COUPLING SHAFT #185



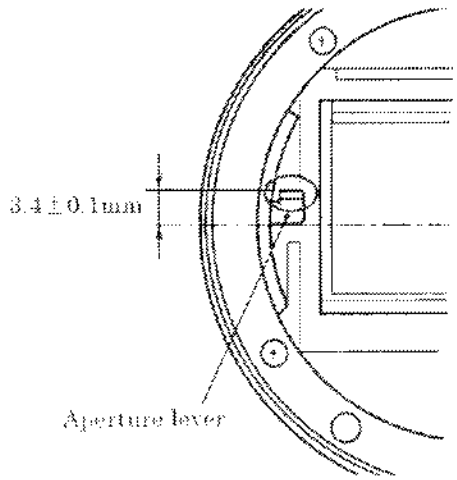
① Set the A/M change-over cam #122 to "S". After pressing the lens quick-disconnect button two or three times, measure the height of the AF coupling shaft #185.

② Adjust the height of the AF coupling shaft using screw #624.

③ The AF coupling shaft should not protrude over the lens mount surface, when the height of lens release pin is adjusted to 0.4mm.

④ After adjusting, secure screw #624 using Screw Lock.

ADJUSTMENT OF APERTURE LEVER POSITION

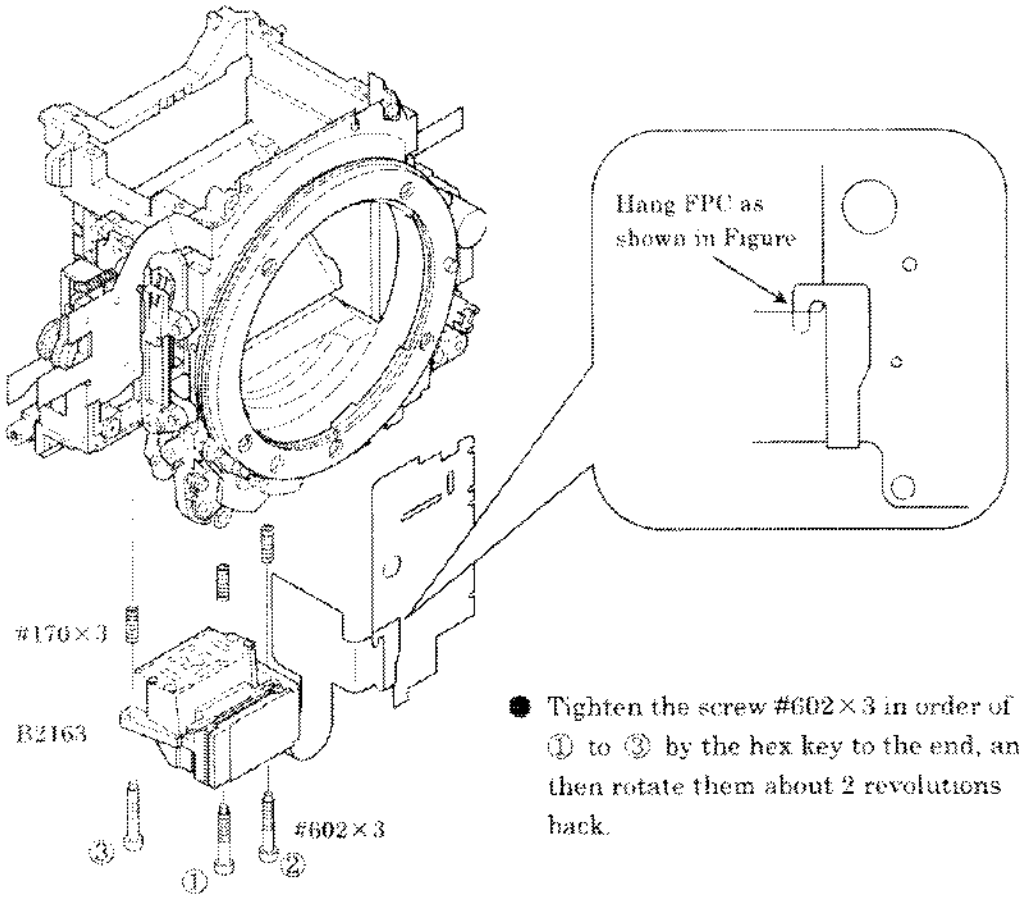


● Measure the height of the aperture lever using tool J18004.

Standard Value : 3.4±0.1mm

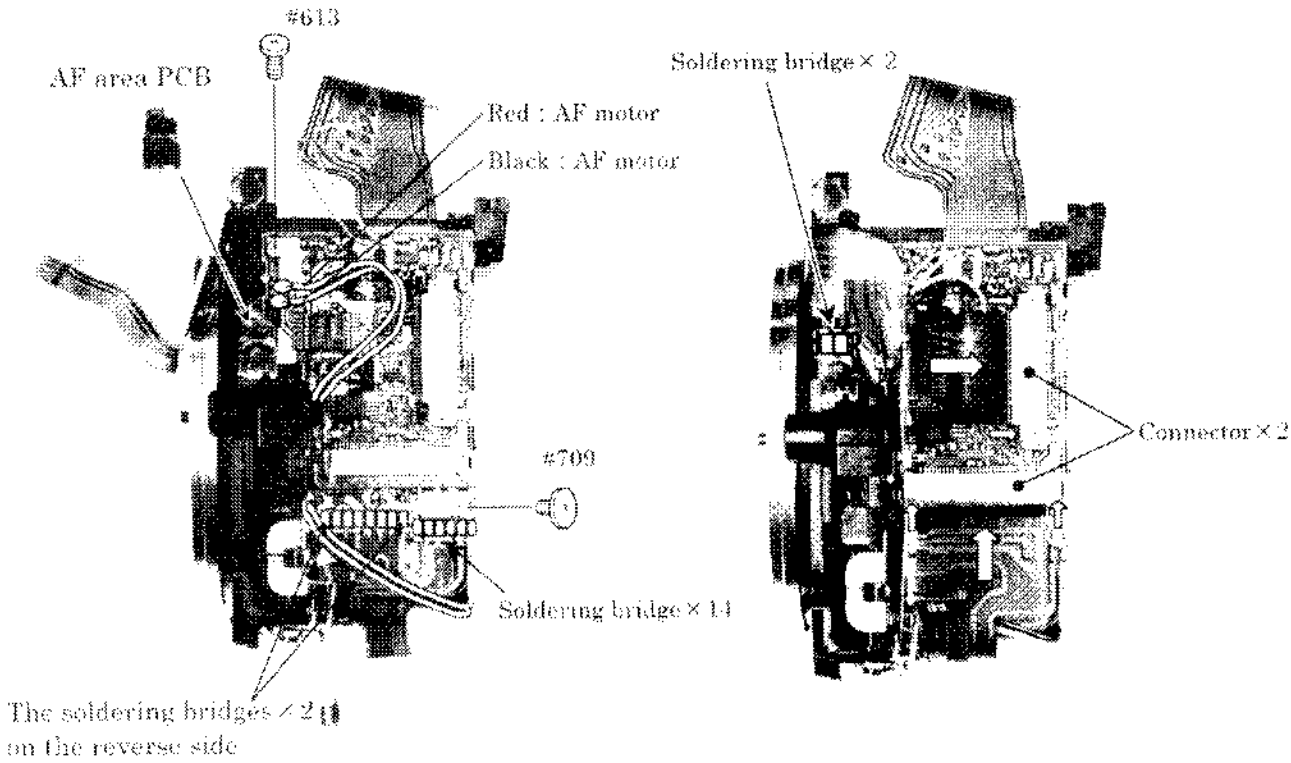
If the height of the aperture lever is out of the standard value, bend the circled position to adjust. While adjusting, take care not to bend the inside lever and stopper portion.

AF SENSOR UNIT



● Tighten the screw #602×3 in order of ① to ③ by the hex key to the end, and then rotate them about 2 revolutions back.

MAIN PCB

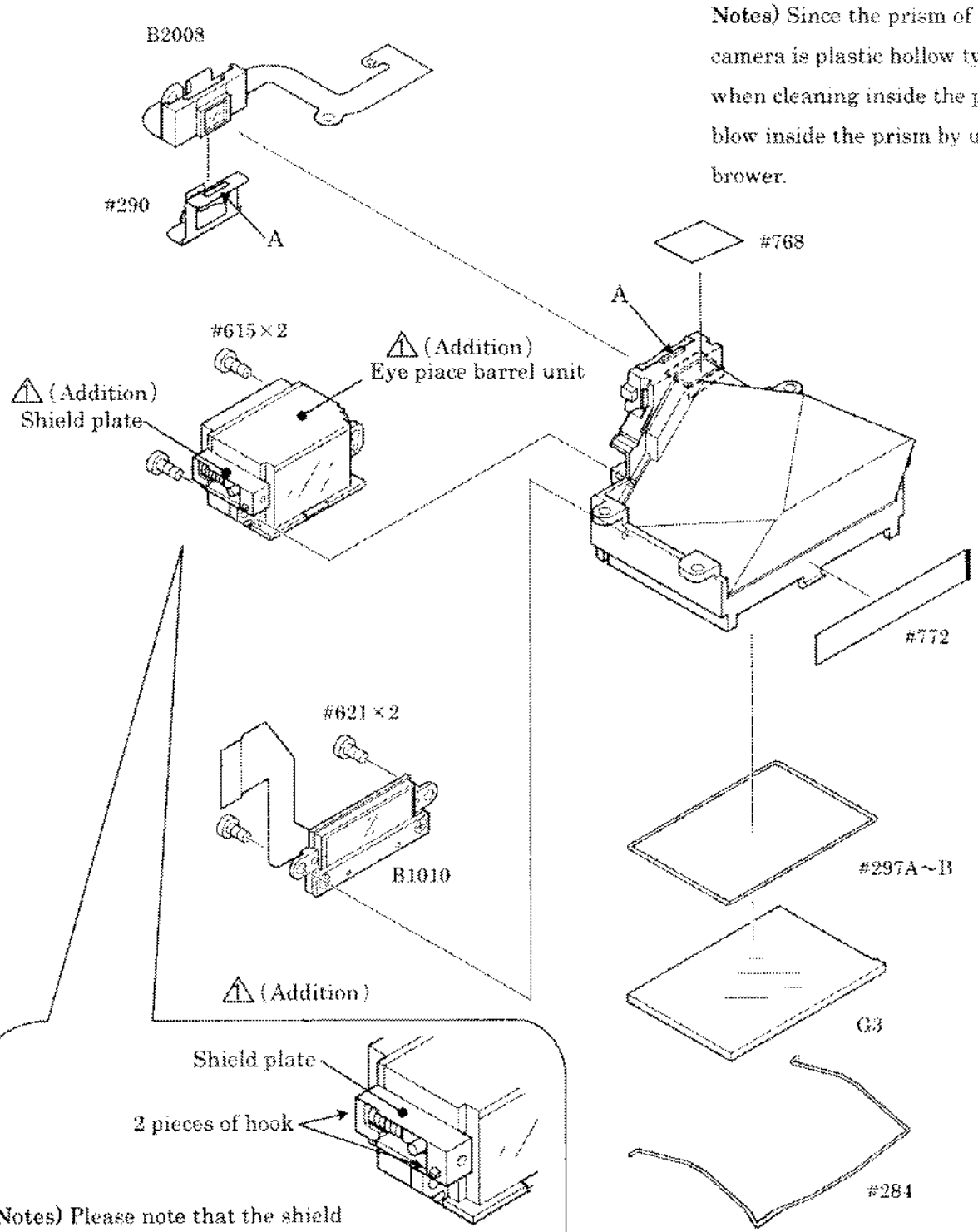


PRISM BOX UNIT

1. Assemble of Prism box section

•Set the AE SPD retainer #290 after putting the metering FPC unit which is fold double as shown in Figure and fitting the concave A and the convex A in Figure. (Fix it temporarily)

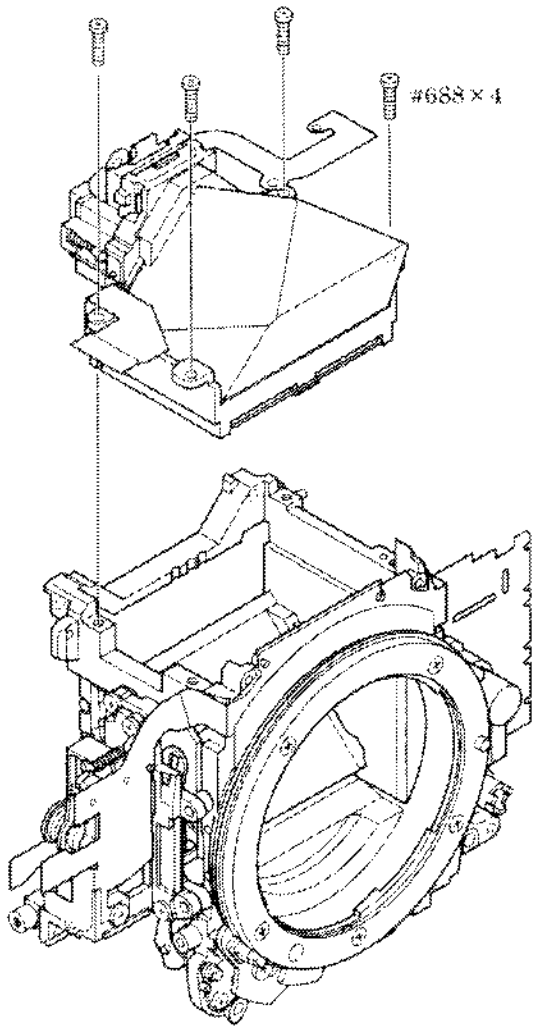
Notes) Since the prism of this camera is plastic hollow type, when cleaning inside the prism, blow inside the prism by using the brower.



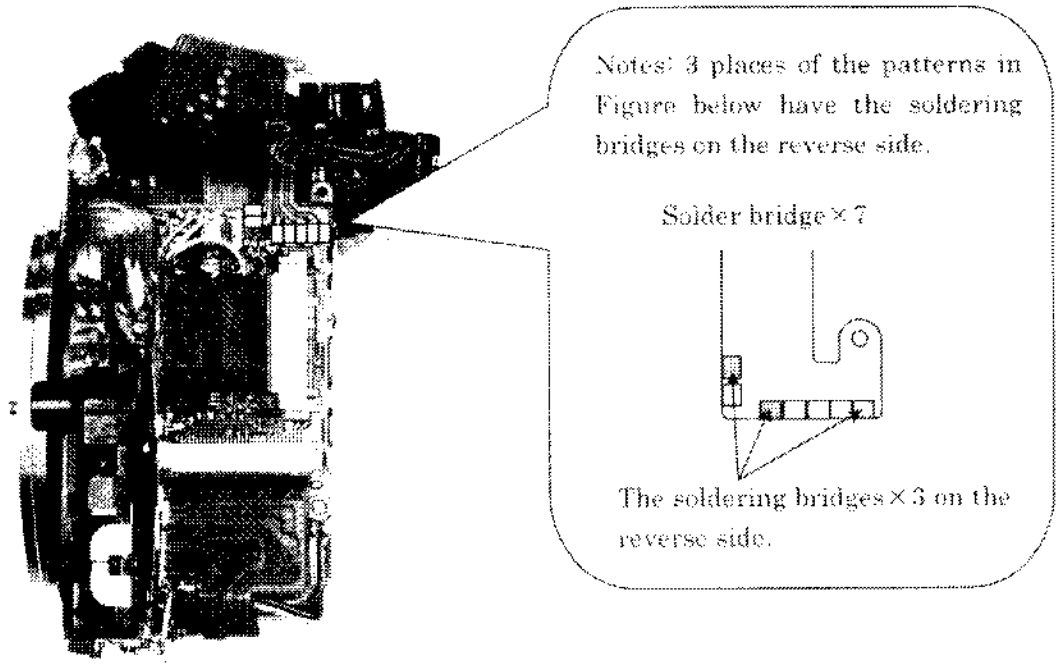
Notes) Please note that the shield plate is easily removed from the 2 pieces of the hooks when assembling the eye piece barrel unit to the pentagonal box or removing the eyepiece frame B271 (Refer to page A25).

サービス計画課 M

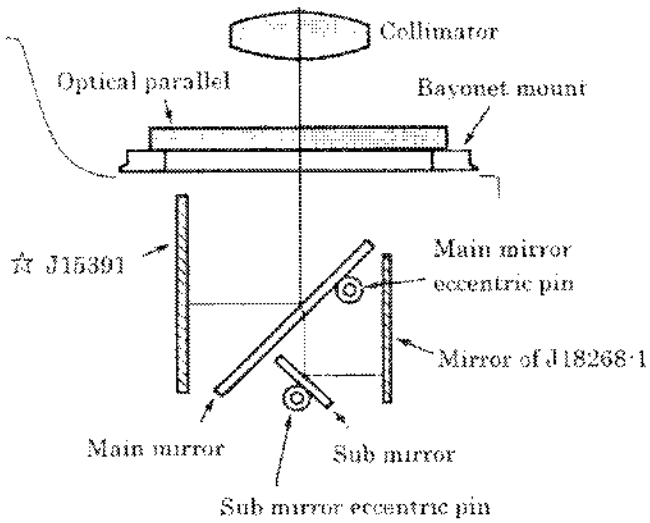
2. Mount prism box on front body



3. Soldering bridges on the metering FPC


Notes: 3 places of the patterns in Figure below have the soldering bridges on the reverse side.
Solder bridge×7
The soldering bridges×3 on the reverse side.

ANGLE ADJUSTMENT OF MAIN MIRROR AND SUB MIRROR TO 45°



*Use tools

1. Angle adjustment of main mirror
   ①Collimator (J19002)
   ②Mirror angle inspection mirror ☆ (J15391)
   ③Optical parallel (J18037)
   ④Hexagonal wrench
2. Angle adjustment of sub mirror
   ①Collimator (J19002)
   ②Sub mirror angle adjustment tool (J18268-1)
   ③Hexagonal Wrench

☆ : NEW TOOL

- Angle adjustment of main mirror to 45°

  Note : Check to confirm the accuracy of the main mirror before and after adjustment by moving it up and down several times.

  ①Checking the discrepancy (right/left)

  If horizontal displacement is out of the standard value, it is possible that bayonet spring #112 is pinched, mirror unit B2231 is defective, or mirror shaft is bent.

  ②Checking the discrepancy (up/down)

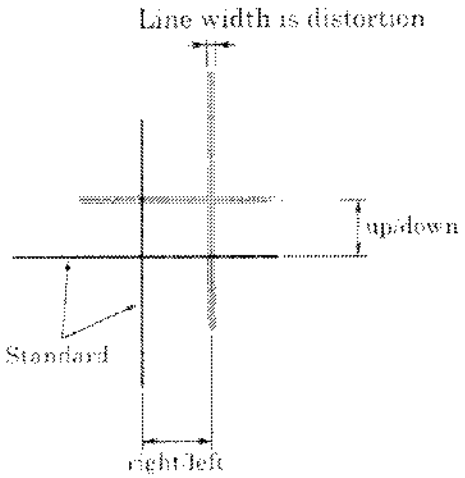
  If the amount of the discrepancy is out of the standard value, rotate the main mirror eccentric pin to adjust.

- Angle adjustment of sub mirror to 45° (47.75°)

  Note : Check to confirm the accuracy of the main mirror before and after adjustment by moving it up and down several times.

  ①Checking the discrepancy (up/down)

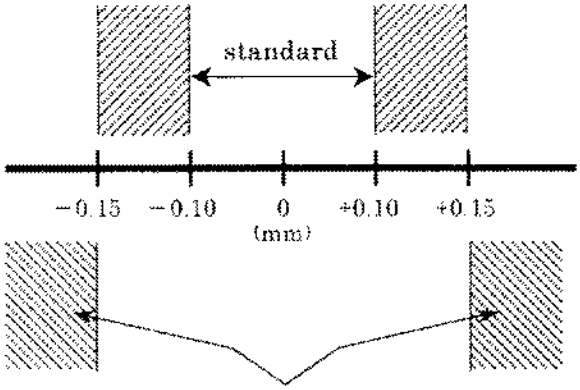
  If the amount of the discrepancy is out of the standard value, rotate the sub mirror eccentric pin to adjust.



Standard :

	Main mirror	Sub mirror
Discrepancy (right/left)	Within ±25'	
Discrepancy (up/down)	Within ±5'	Within ±5'
Distortion	Within ±8'	Within ±8'

ADJUSTMENT OF INFINITY (∞)



Check for the deformation of the front body or Prism box.

⚠(Addition)

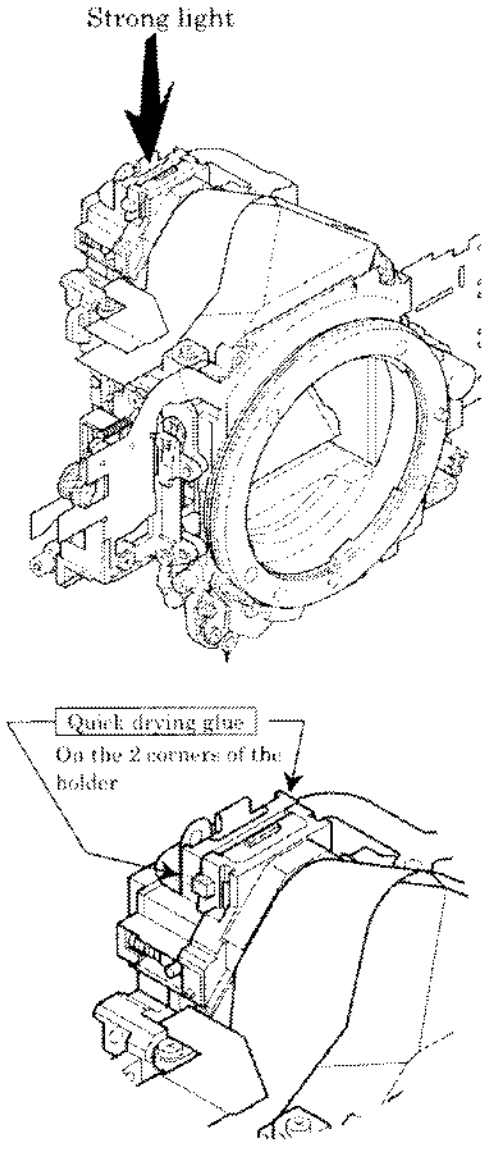
- Replace the finder screen to the infinity focus check screen J15394 and then set the reference lens J18010 and read the value.

  - In the case of -0.10~+0.10
    As it is within the standard range, adjustment is not required.

  - In the case of -0.15~0.10 or +0.10~+0.15
    Replace the G3 washer #297.

  - In the case of -0.15 or less or +0.15 or more
    Check for the deformation of the front body or Prism box.

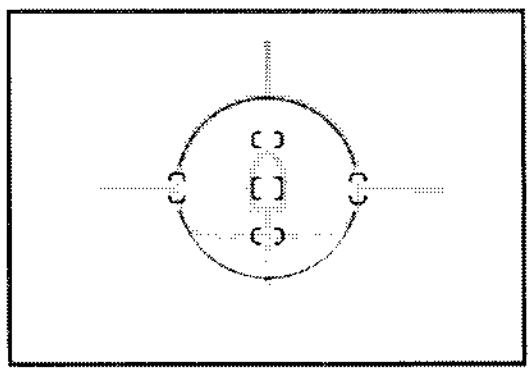
AE SPD POSITION ADJUSTMENT



① Shade the eyepiece and Mirror box using a black tape.

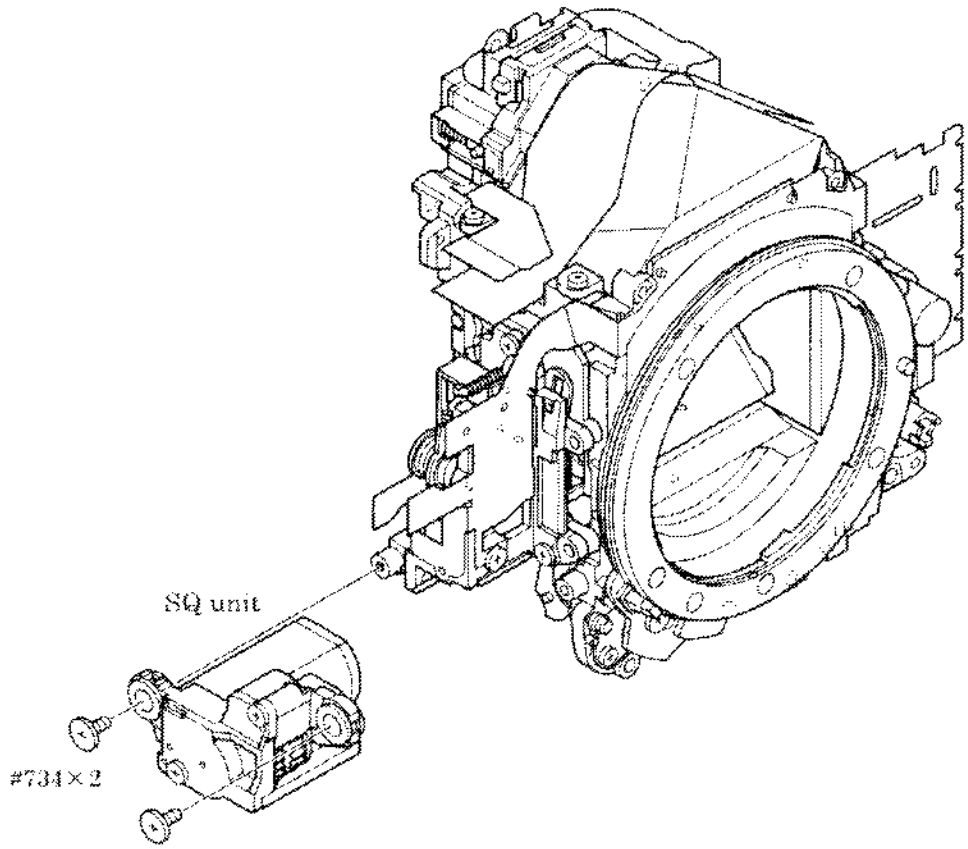
② As shown in the left figure, project strong light from the top of the AE SPE so that the AE SPD pattern is reflected on the main mirror.

③ As shown the figure below, align the center of the AE SPD with both the focus frame and the φ12mm circle.
The AE SPD should be parallel to the main mirror.



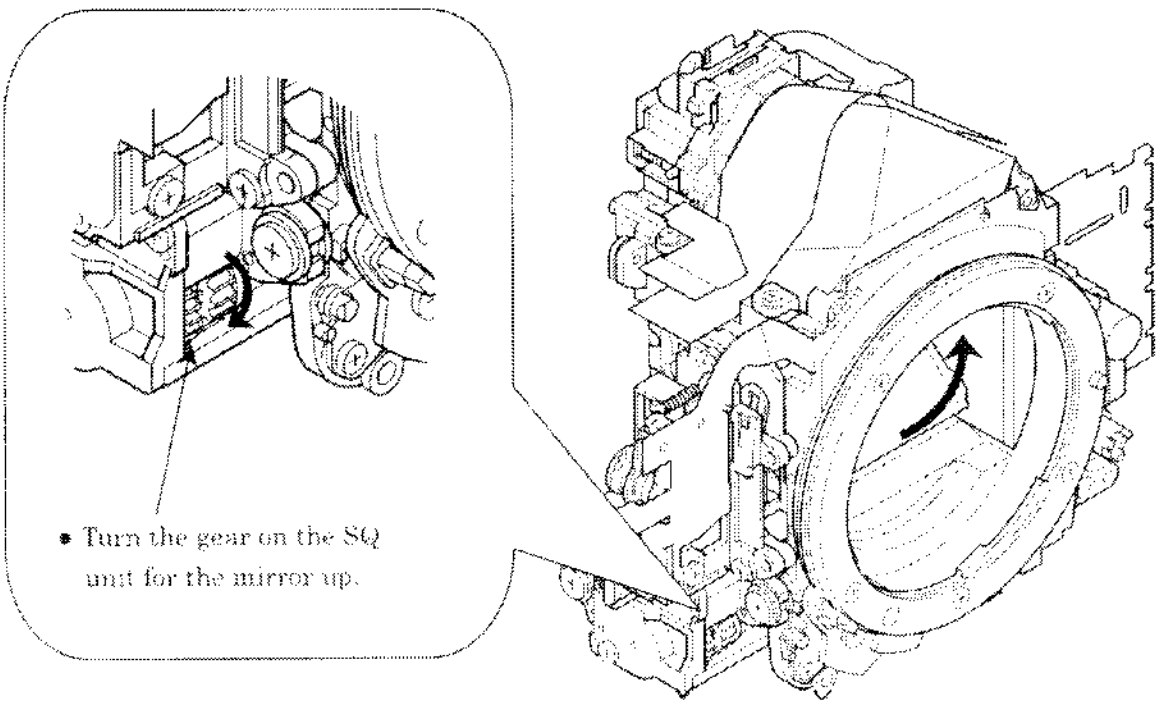
④ Fix the AE SPD holder on the prism box using Quick drying glue.

SQ UNIT

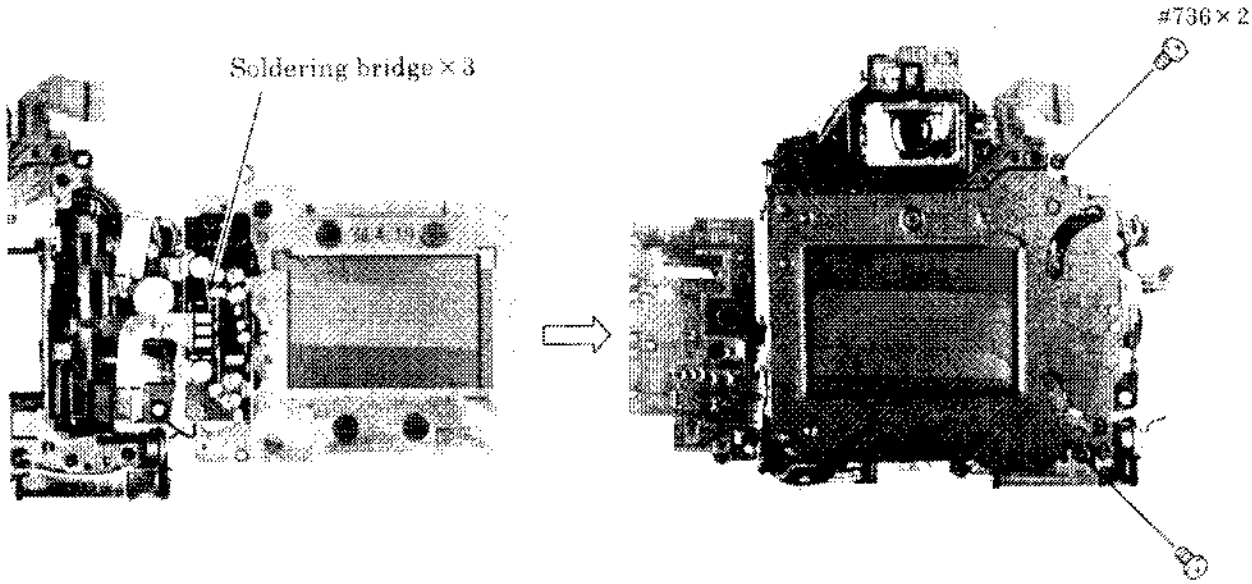


SHUTTER

1. Mirror up



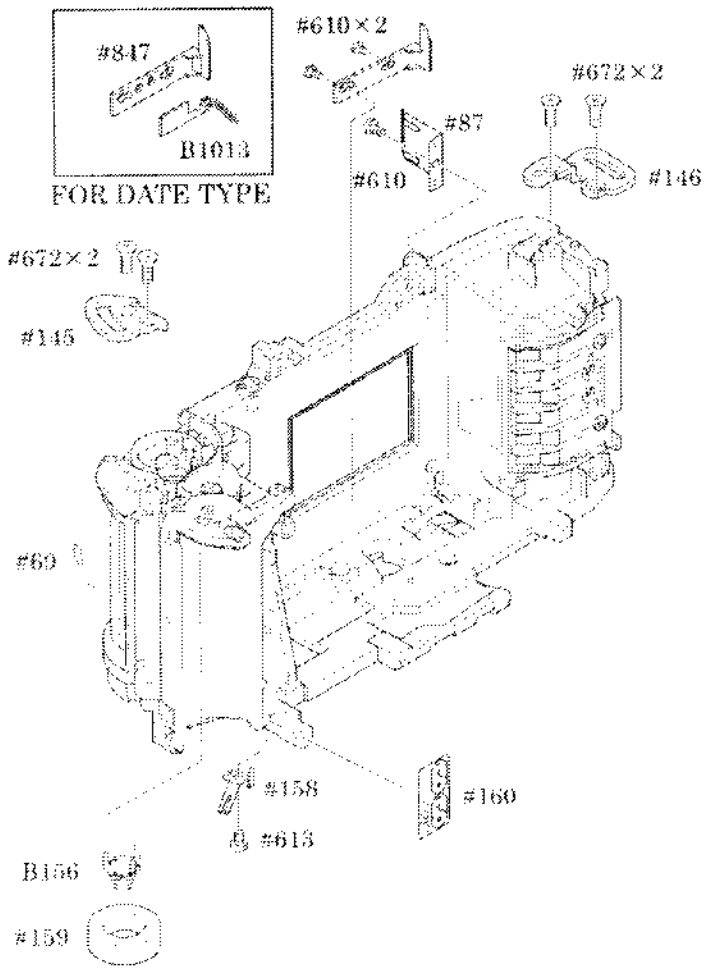
2. Mount the Shutter unit to Front body



• After attaching the shutter, rotate the SQ gear more and make the mirror down.

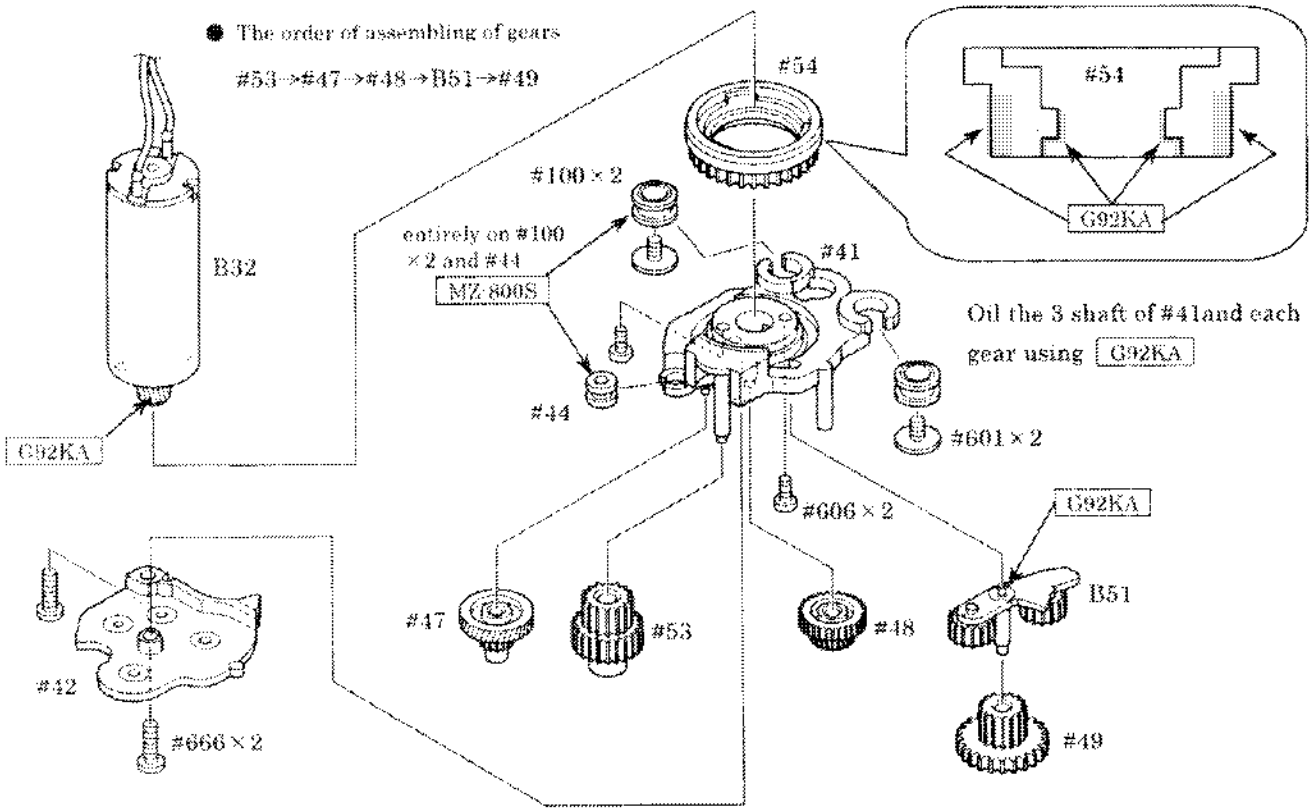
2. REAR BODY

SMALL PARTS OF REAR BODY

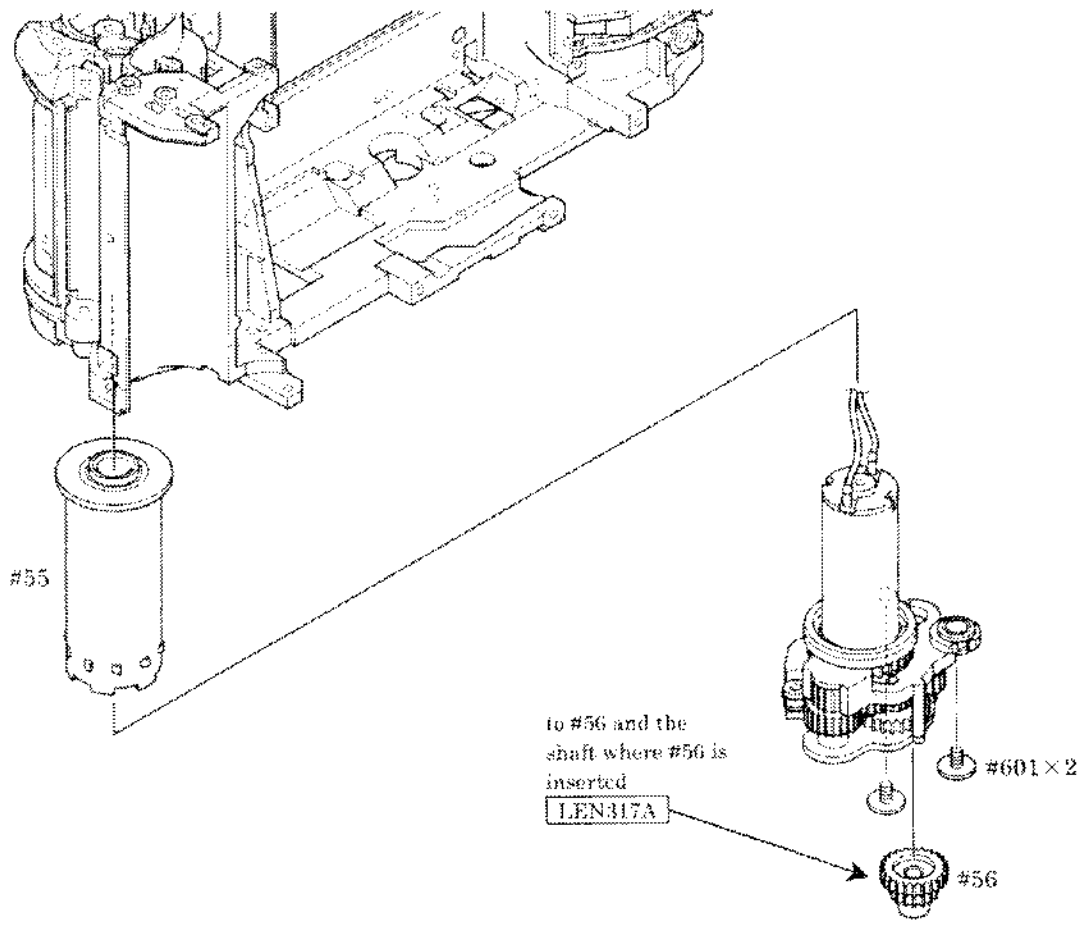


FILM ADVANCE UNIT

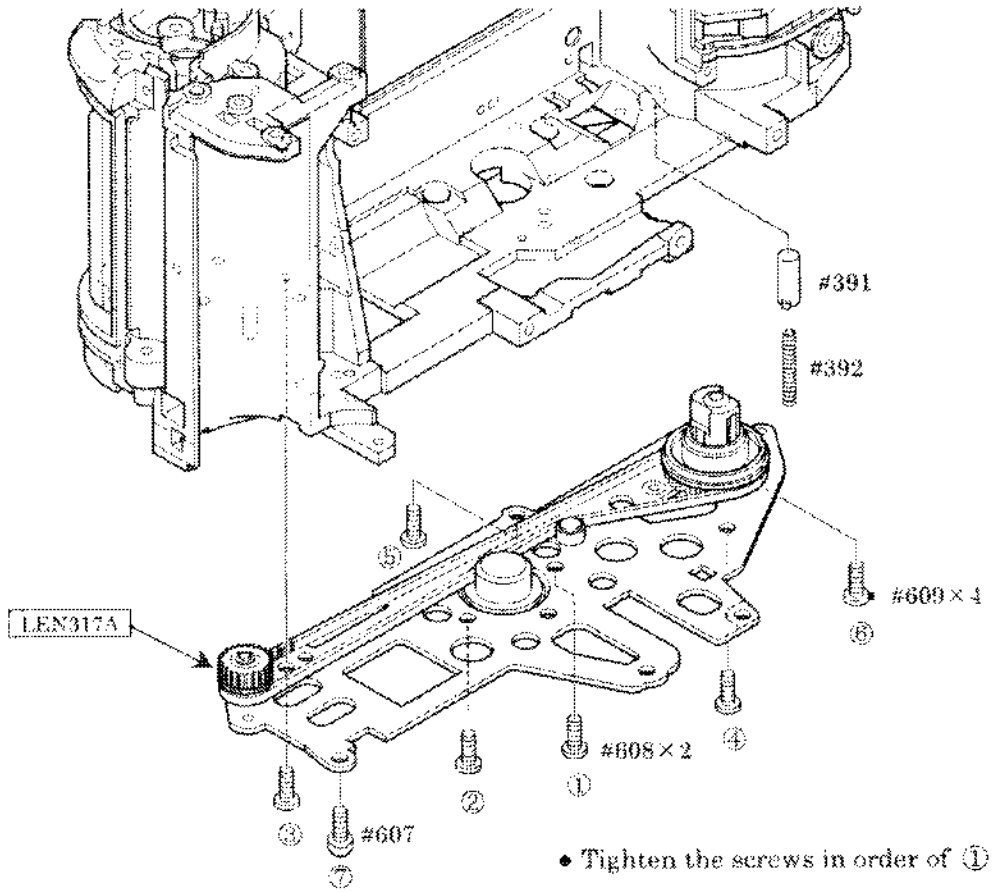
1. Assembling of each gear



2. Mount the Film Advance Unit to the Rear Body

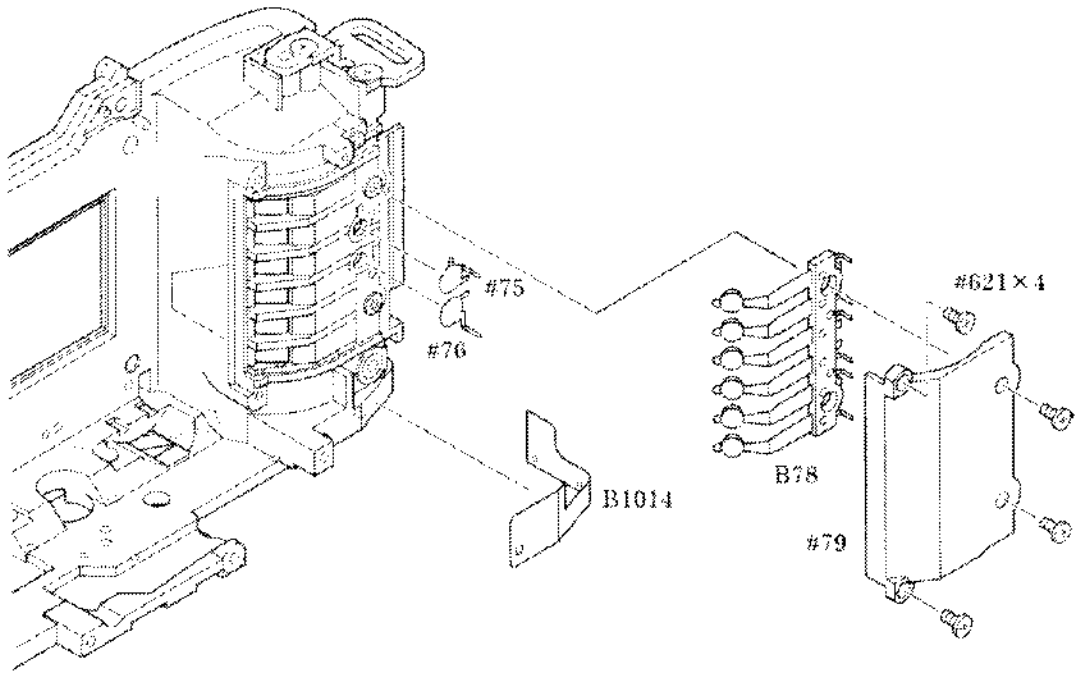


BOTTOM BASE PLATE

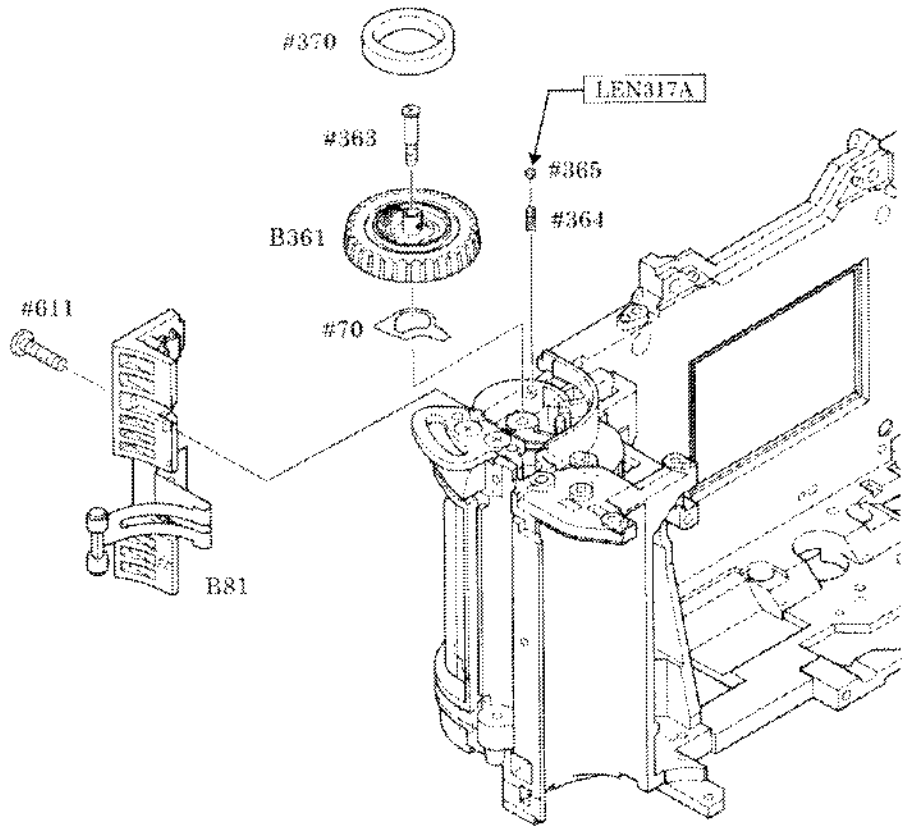


• Tighten the screws in order of ① to ⑦.

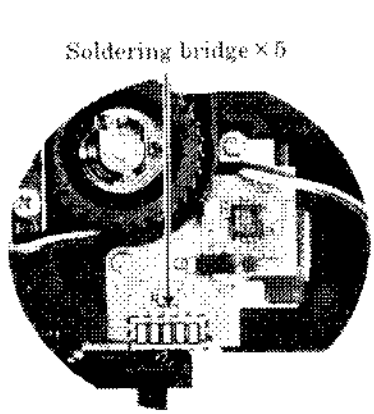
DX CONTACT

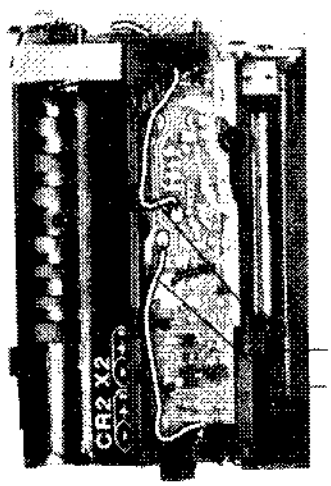


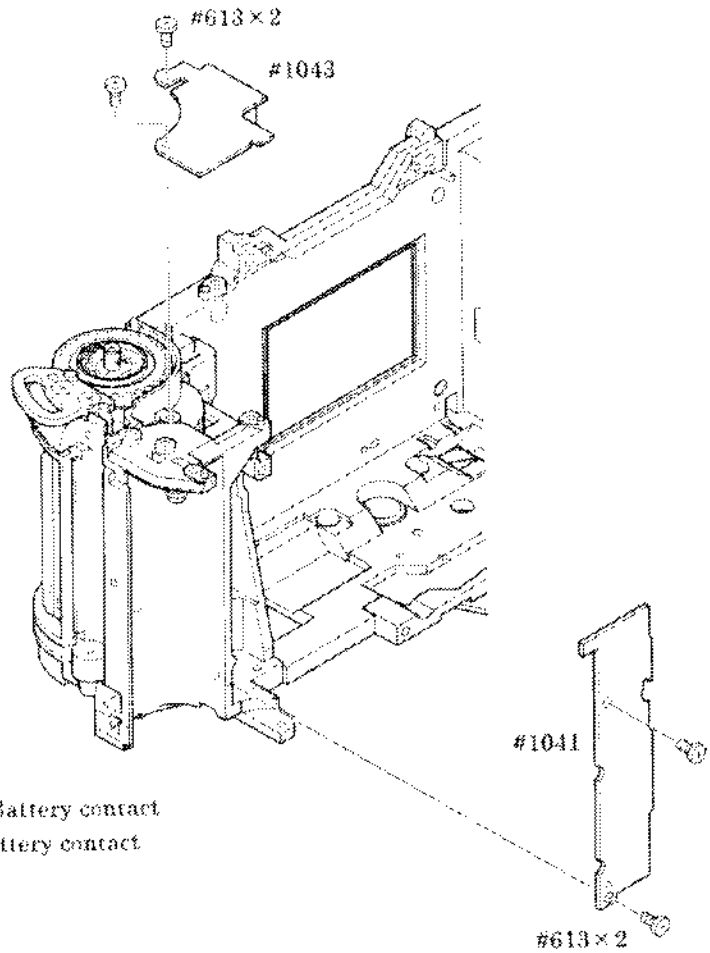
COMMAND DIAL, PR BASE PLATE UNIT



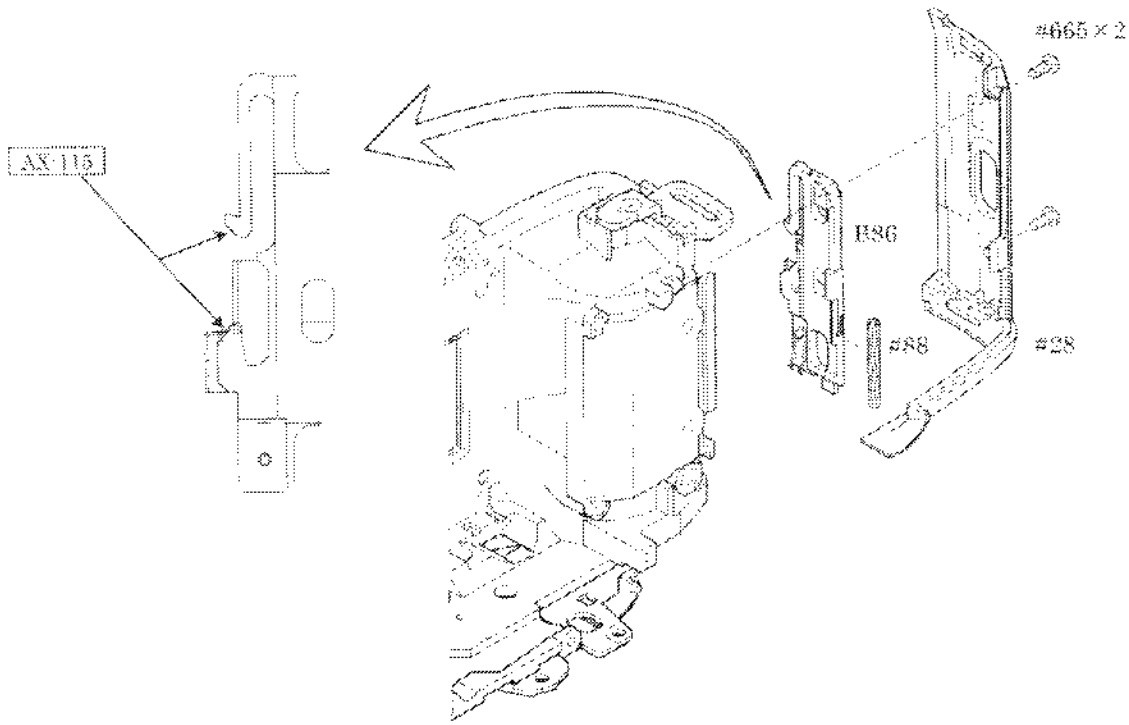
SB UNIT, DC/DC UNIT





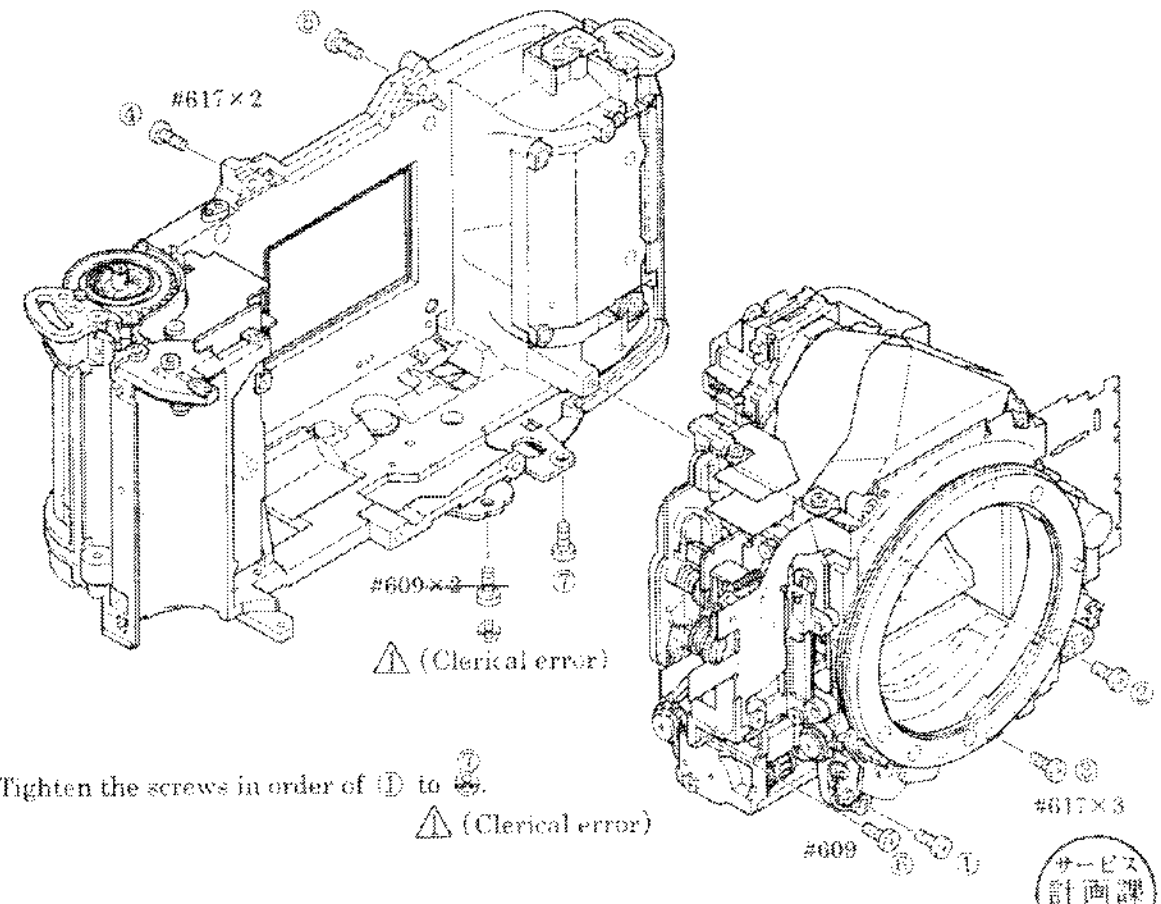


BACK DOOR OPEN/CLOSE AREA



3. MOUNTING BOTH THE FRONT AND THE REAR BODIES

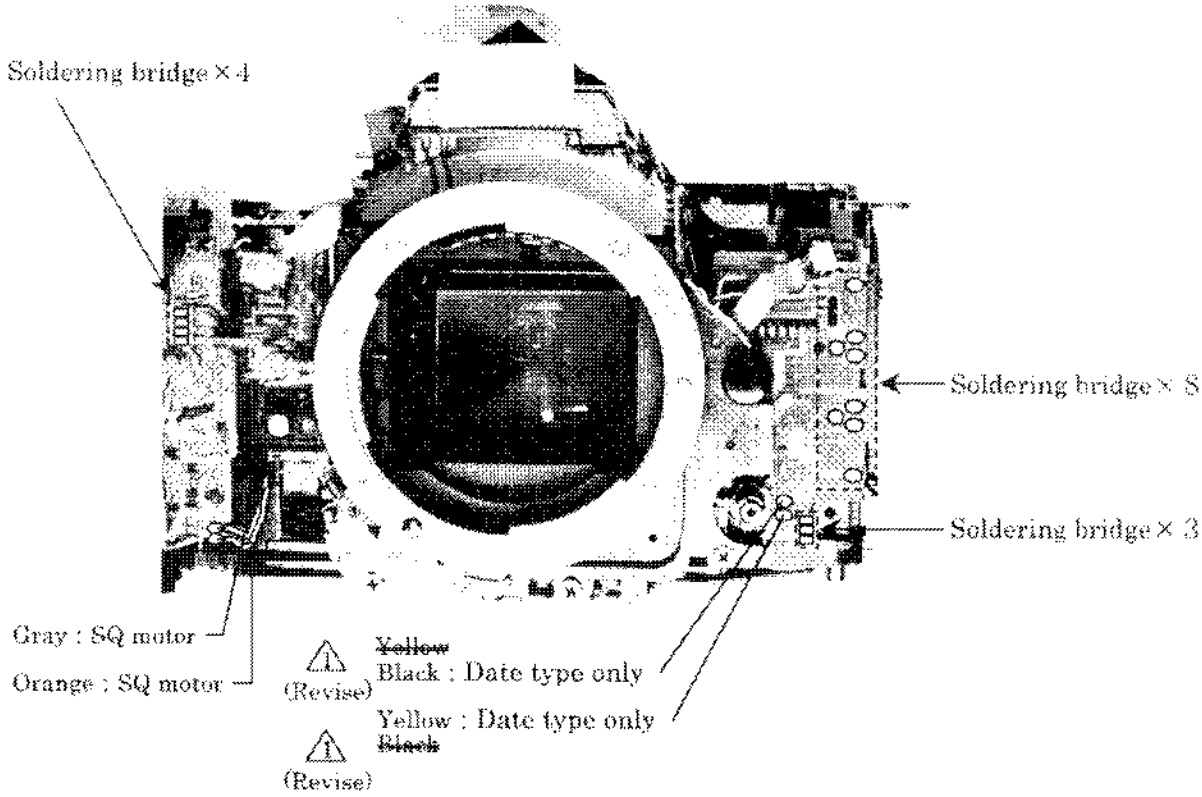
MOUNT THE FRONT BODY TO THE REAR BODY



• Tighten the screws in order of ① to ⑦.

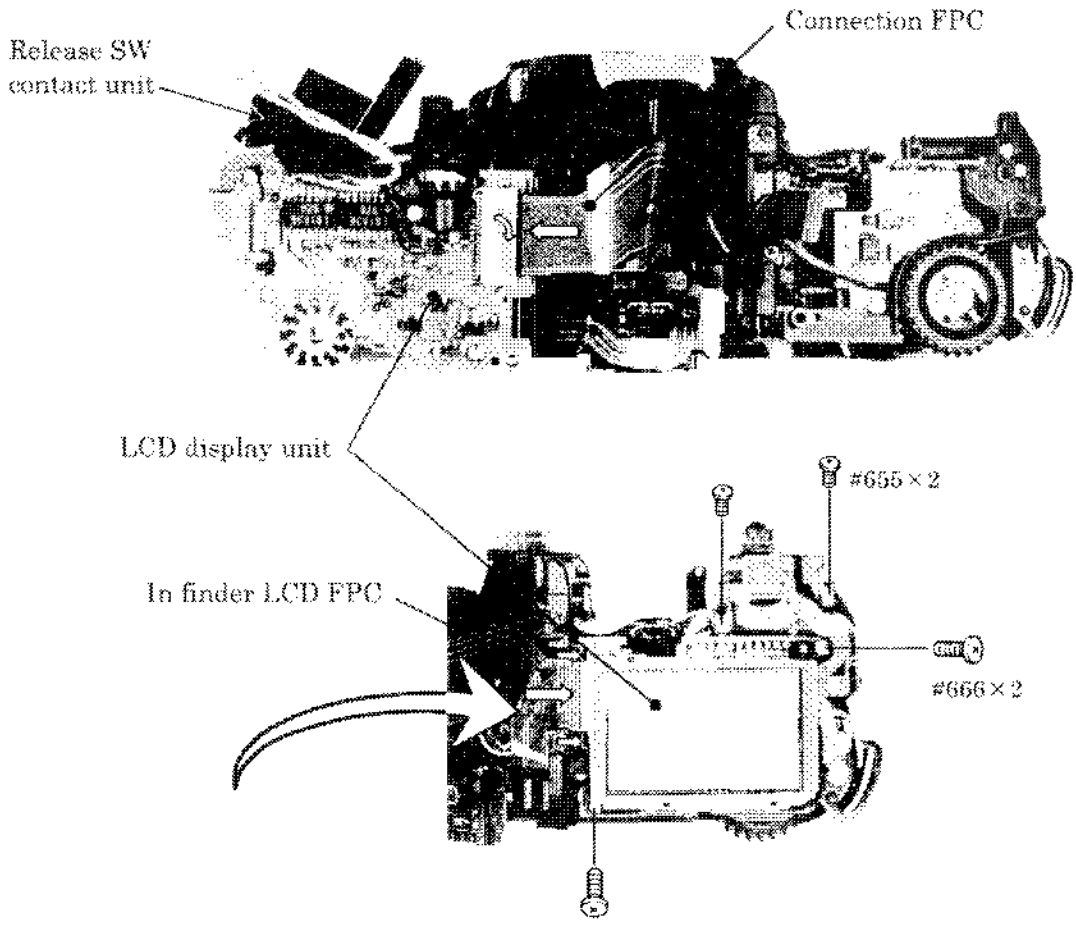
⚠ (Clerical error)

サービス 自動課 M



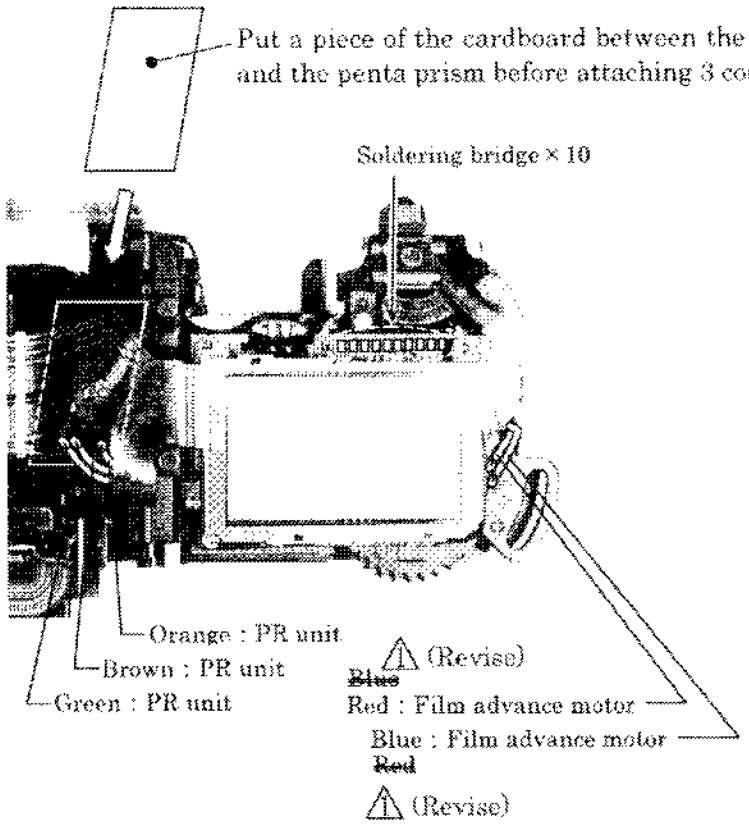
LCD DISPLAY UNIT

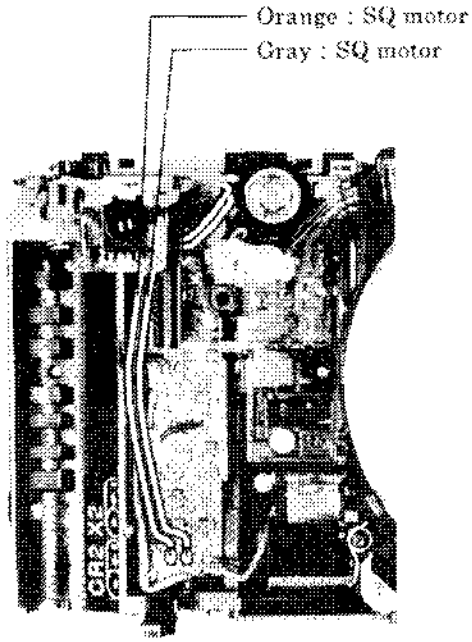
1. Connector, Mount of screw(s)



サービス計画課 M

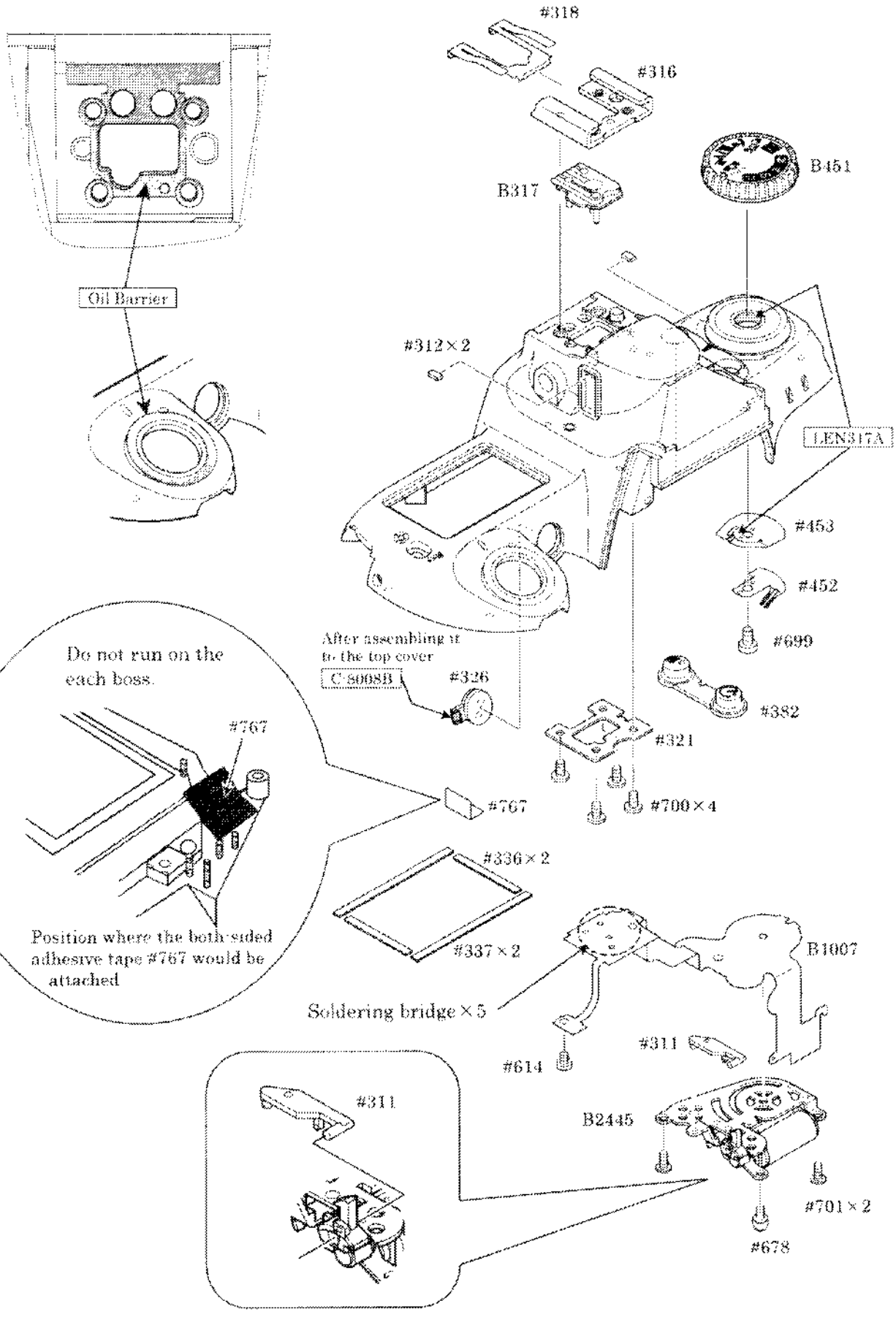
2. Connector, each wires


Put a piece of the cardboard between the FPC and the penta prism before attaching 3 codes.
Soldering bridge × 10
Orange : PR unit
Brown : PR unit
Green : PR unit
⚠ (Revise)
~~Blue~~
Red : Film advance motor
Blue : Film advance motor
~~Red~~
⚠ (Revise)

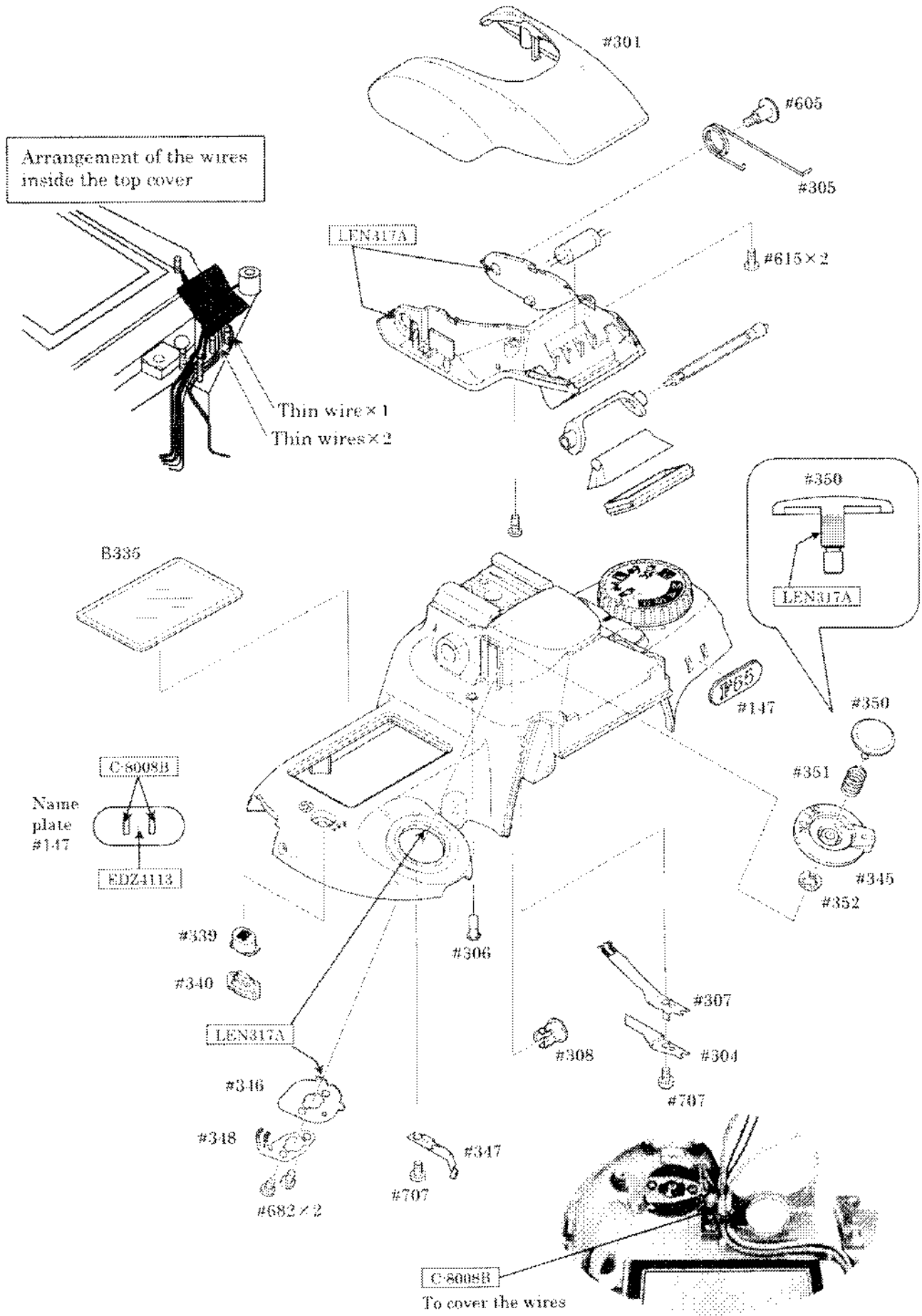


TOP COVER

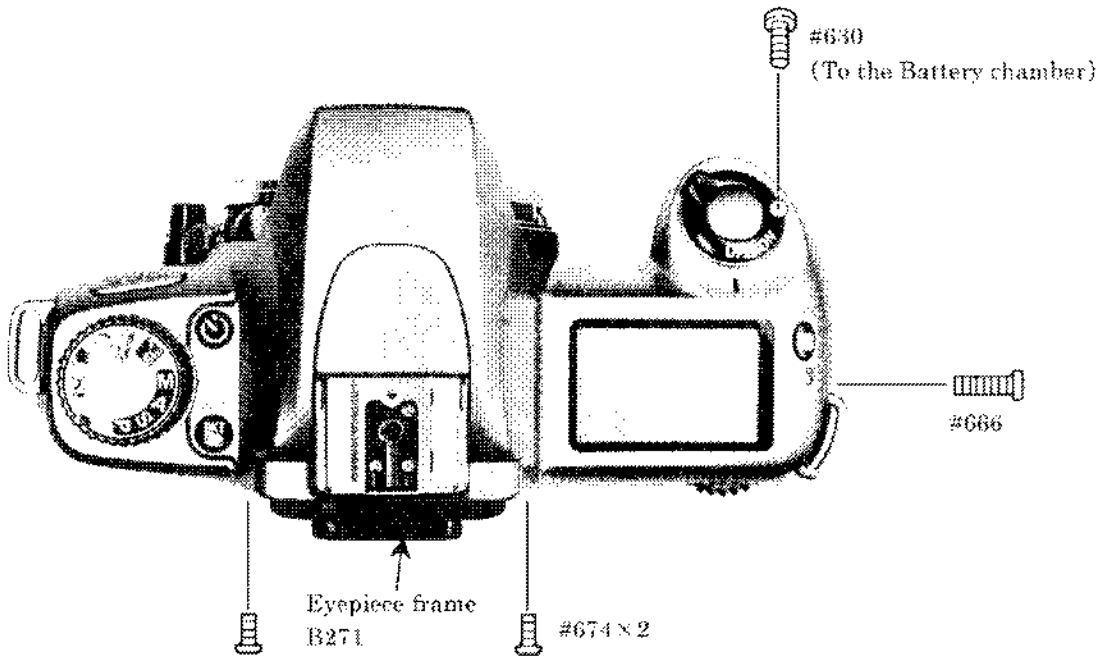
1 . Accessory shoe, Mode dial unit



2. SB area, Small parts



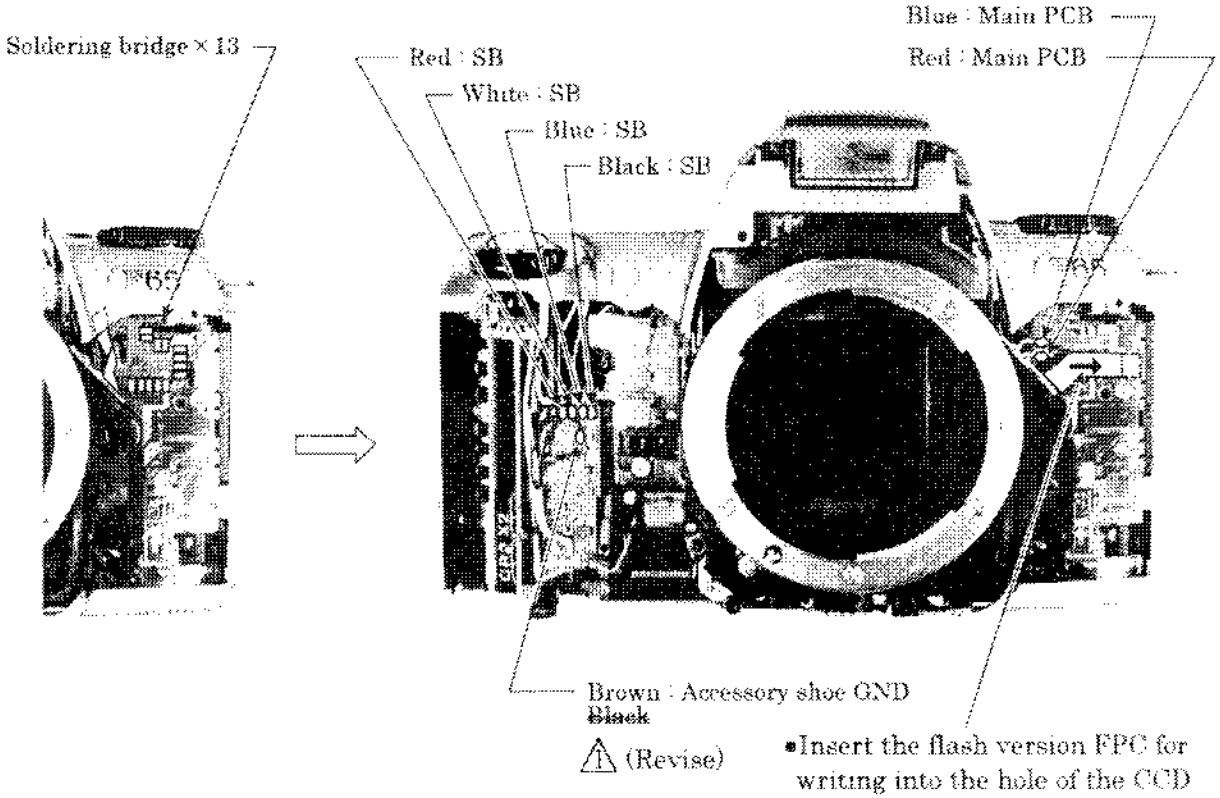
3. Mount the Top cover to the Body



- Attach the eyepiece frame B271, setting the diopter adjustment lever to "-" side (lowest position) and passing the frame under the movable lens lever.

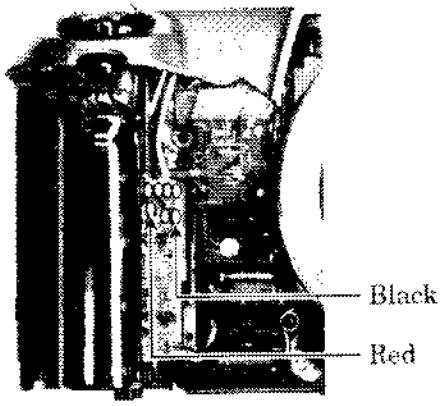
Check : After the eyepiece frame is attached, slide the diopter adjustment lever and check the diopter correction lens performance.

4. Each wires, Soldering bridges

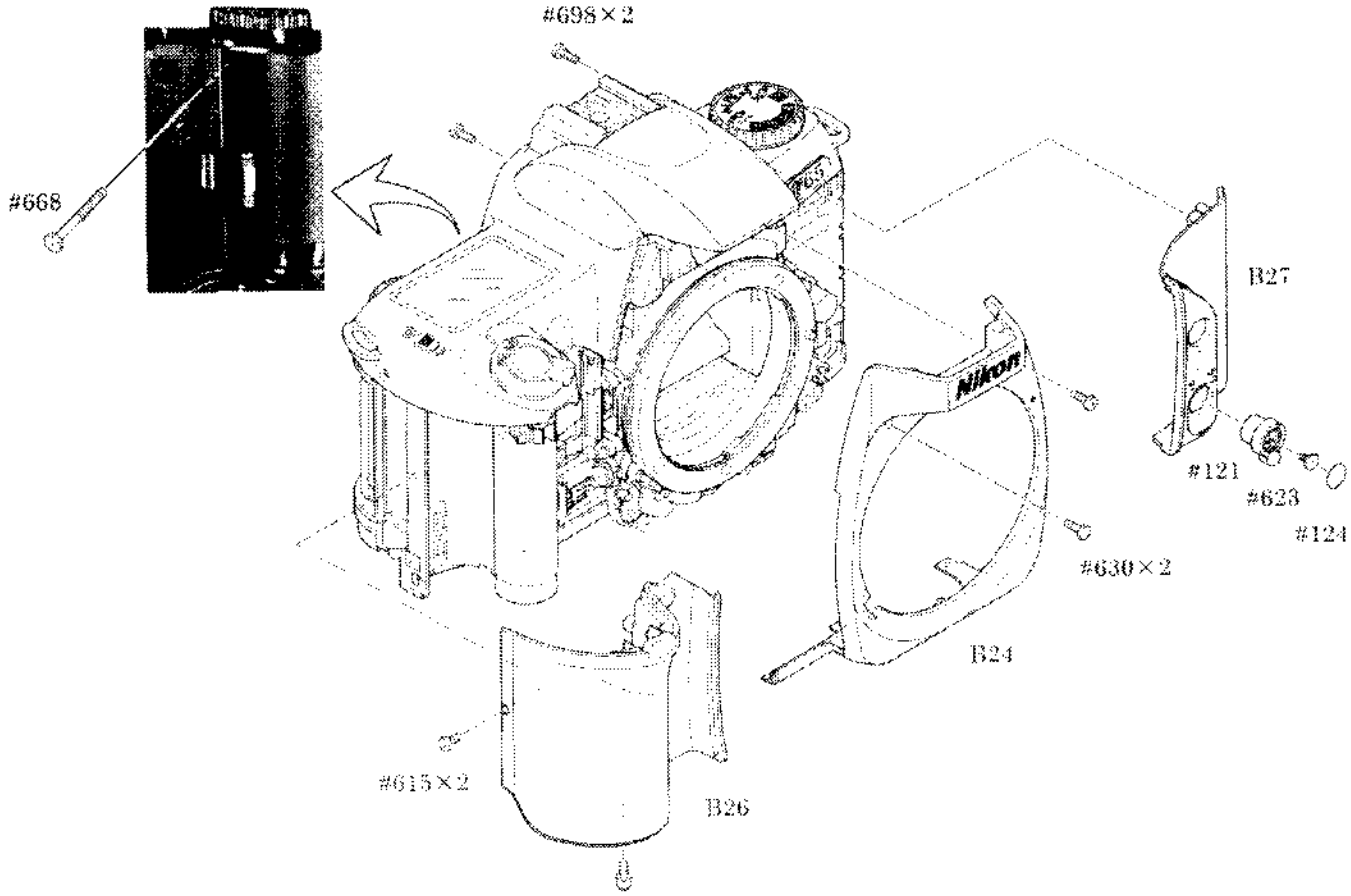

Soldering bridge × 13
Red : SB
White : SB
Blue : SB
Black : SB
Blue : Main PCB
Red : Main PCB
Brown : Accessory shoe GND
~~Black~~
⚠ (Revise)
•Insert the flash version FPC for writing into the hole of the CCD FPC.

GRIP COVER, REWIND SIDE COVER, FRONT COVER

• Attachment of the main condenser

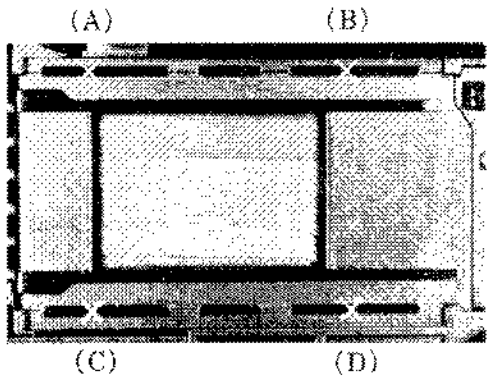


• In the last place, assemble the Front cover #24



INSPECTION & ADJUSTMENT OF BODY BACK

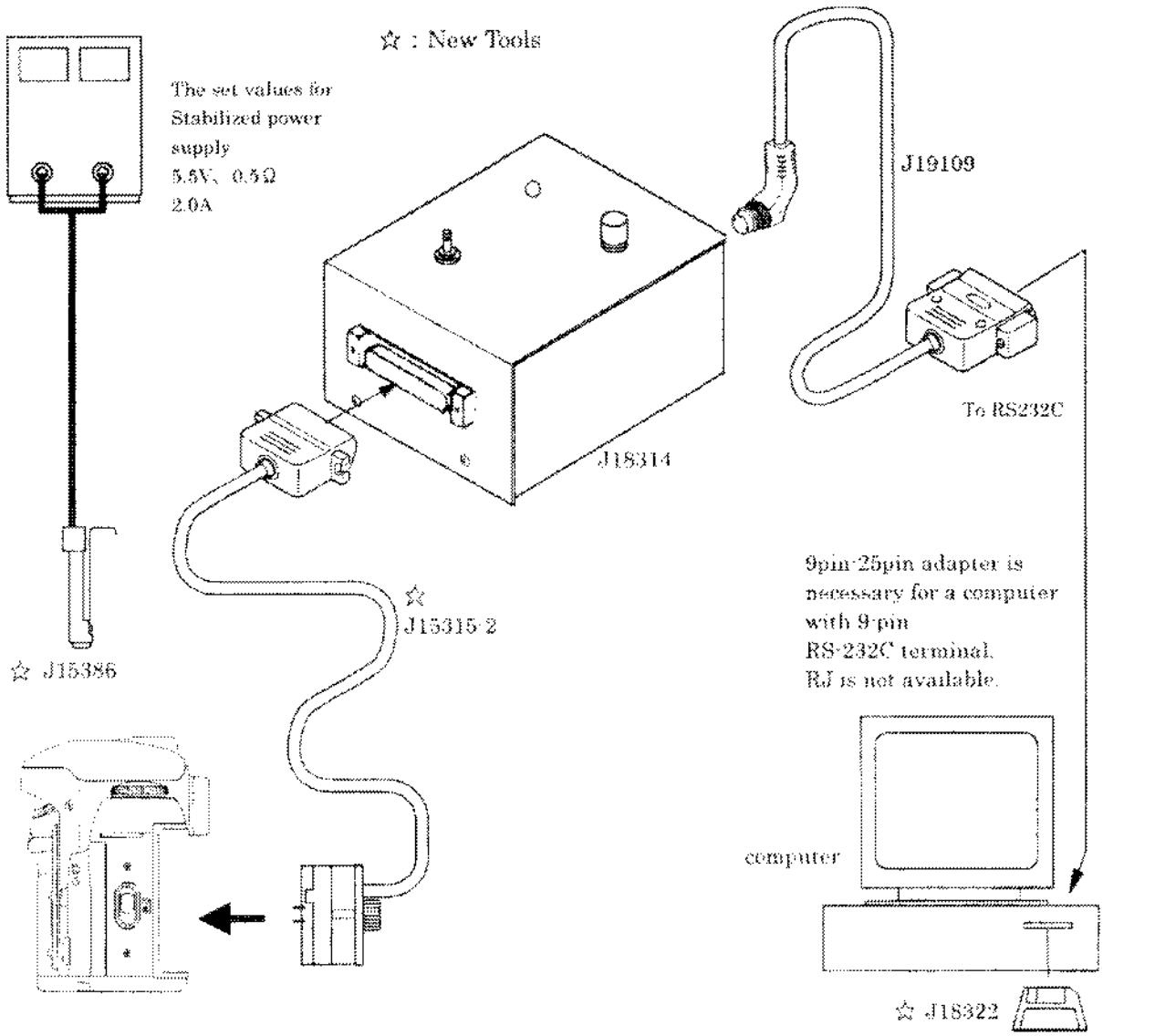
Notes) Take note (A) to (D) in order to use the difference from the standard 46.67mm at AF adjustment after inspection and adjustment.



- Measure from the bayonet surface to the external rail. The ×-marked positions are where to be measured.
  Standard : $46.67^{+0.03}_{-0.09}$ mm / Tolerance for flatness : within 0.06 mm

- If the measured value is out of the standard Value, unfasten bottom of screws #609 and #607 to move the front body back and forth.
  If it is within -0.05 mm, adjust it, placing the washer under the bayonet mount. If it is -0.06mm or more, adjust it placing the washer between the docking surface of front and rear bodies.

ADJUSTMENT THROUGH PC



Inspection and adjustment F10
For F65

Conduct each adjustment in accordance with the adjustment software instructions on PC screen.

1. AE adjustment
2. aperture adjustment
3. M1/ 2000 adjustment
4. TTL adjustment
5. Battery check adjustment

NOTE : Be sure to utilize either "F90" or " N90" oriented camera's shutter curtain.

Confirmation of the Battery check display mode

After adjusting the battery check, input below-mentioned each voltage data to the camera and then check the external LCD mode.

Note : Conduct the inspection by switching each voltage in order of No.1 to 5.

External LCD mode	Set up voltage from the stabilized power supply	
	① 5.35V	⑤ 5.65±0.2V
	② 4.75±0.2V	④ 5.05±0.2V
blinks	③ 4.45±0.2V	

AF ADJUSTMENT

Notes) When using this adjustment software for the first time, prepare 5 units of F65 and measure them at the Adjustment for AF. Then, input the average value of the measured 5 units at "WRITING OF AF ADJ. LENS OFFSET VALUE " in the main menu.

〔Inspection and adjustment items〕

① Inspection and adjustment for the AF accuracy (whole item shall be adjusted)
② YAW, PITCH
③ LARK adjustment (include CCD output)
④ MBF adjustment

〔Tools in use〕

1. For adjustment of whole item:
   The tool(s) used for the AF-oriented adjustment shall be utilized.
2. For check of the AF accuracy
   ① Z adjustment lens (J18266) for F5、F100、F80

② AF adjustment stand (J13259)

③ Z lens holder (J15280) or position conversion adapter (J15271) for tripod socket

④ AF chart (J18237) for F5、F100、F80

⑤ Lighting box (J15264) for high frequency

3. For adjustment of YAW, and PITCH

① The whole tool used for the check of AF accuracy just as mentioned above

② Adjustment tool for YAW, and PITCH (J18230)

4. For adjustment of LARK (include CCD output adjustment)

The whole tool used for the check of AF accuracy just as mentioned above

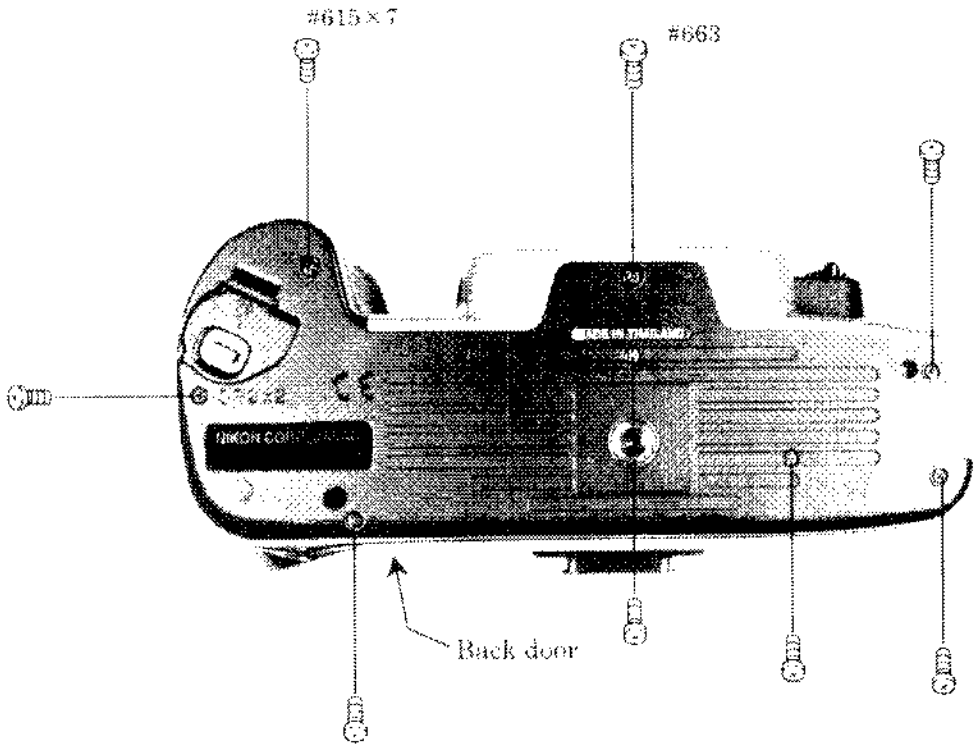
AF50/1.4D lens

BACK DOOR, BOTTOM COVER

① Insert the back door from the bottom and attach it by the shaft×1

② Attach the bottom cover and fix it by the screw×8

Notes) Never use the solvent when cleaning the pressure plate, but use the A-level dust cleaning cloth or Savina Minimax and wipe it softly because the pressure plate of this camera is coated with the special paint.



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回路図 …… E2
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サブ基板 …… E7～E10
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CCDFPC …… E12～E13
TTLFPC …… E14～E15
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前ボディFPC …… E21～E22
メインSW FPC …… E23
DB FPC …… E24～E25
ホットシュー暫定FPC …… E26
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EEPROMデータ表 …… E28～E42

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CIRCUIT DIAGRAM …… E2
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SUB PCB …… E7～E10
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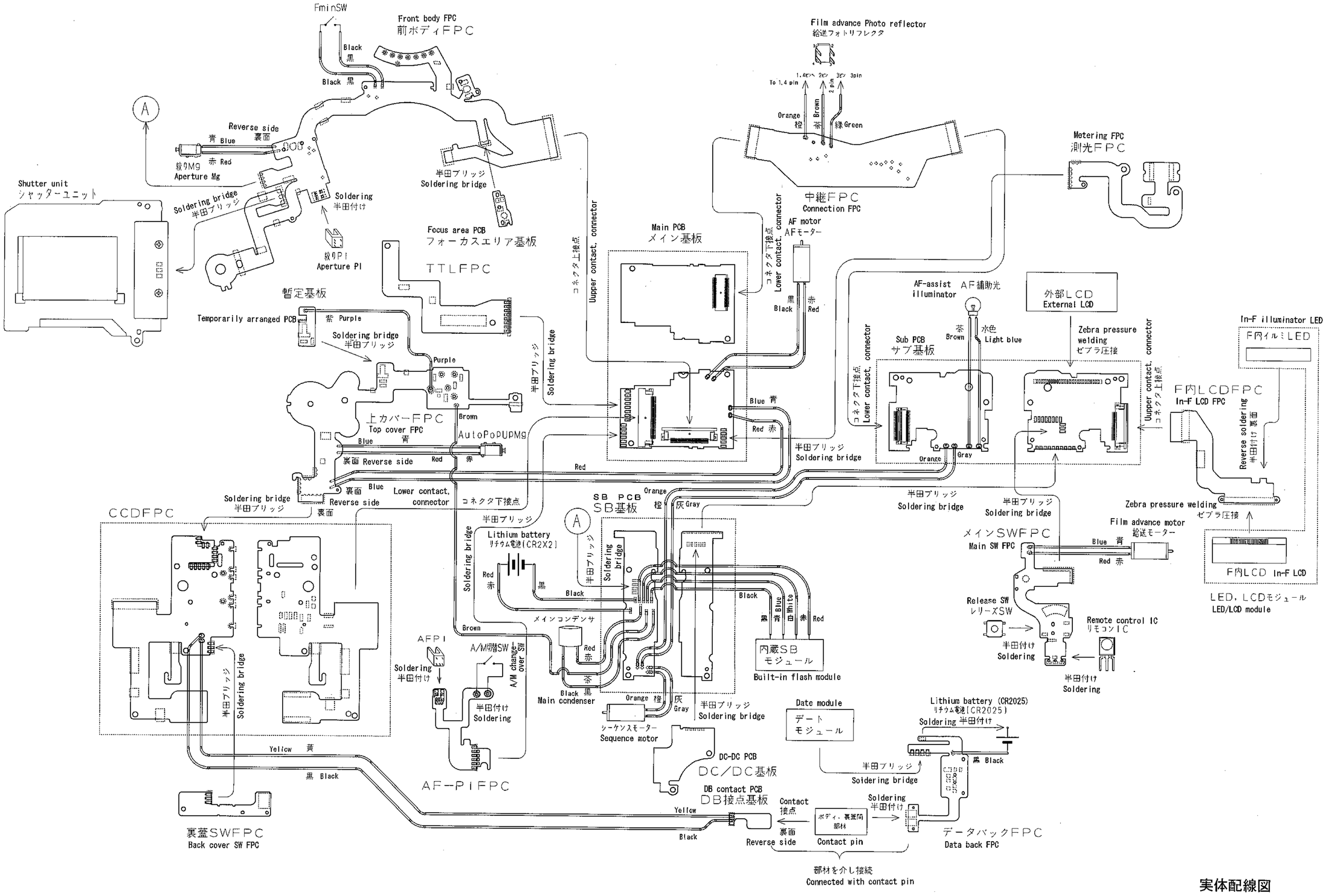
TOP COVER FPC …… E16～E18
METERING FPC …… E19～E20
FRONT BODY FPC …… E21～E22
MAIN SW FPC …… E23
DB FPC …… E24～E25
HOT SHOE TEMPORARY FPC …… E26
DC-DC CONVERTER …… E27
EEPROM DATA …… E28～E42



実体配線図
WIRING

回路図
CIRCUIT DIAGRAM

上カバーＦＰＣ
Top cover FPC

CCDFPC

メイン基板
Main PCB

サブ基板
Sub PCB

Data back FPC
データバックFPC

DB contact PCB
DB接点基板

Data module
データモジュール

I/F-IC
M52952GP
U2

メインMCU
Main MCU
M16C/62
U1

サブMCU
Sub MCU
MB89150
U201

Back cover SW FPC
裏蓋SW FPC

測光ＦＰＣ
Metering FPC

中継ＦＰＣ
Connection FPC

メイン SW FPC
Main SW FPC

内蔵ＳＢモジュール
Built-in flash module

ＤＣ－ＤＣモジュール
DC-DC module

前ボディＦＰＣ
Front body FPC

AFMotor

AFPI-FPC

TTLFPC

絞りMg
Aperture Mg

FmainSW

絞りPI
Aperture PI

フォーカスエリア基板
Focus area PCB

Film advance PR
巻上PR

AF-assist illuminator
AF補助光

External-LCD
メイン-LCD

Illuminator LED
(RGLED)

Power-SW

半押しSW　Pre-release SW
レリーズSW　Release SW
露出補正／絞り　Exposure compensation/aperture

リモコンIC
Remote control IC

給送モーター
Film advance motor

Sequence motor
シーケンスモーター

Main condenser
メインコンデンサ

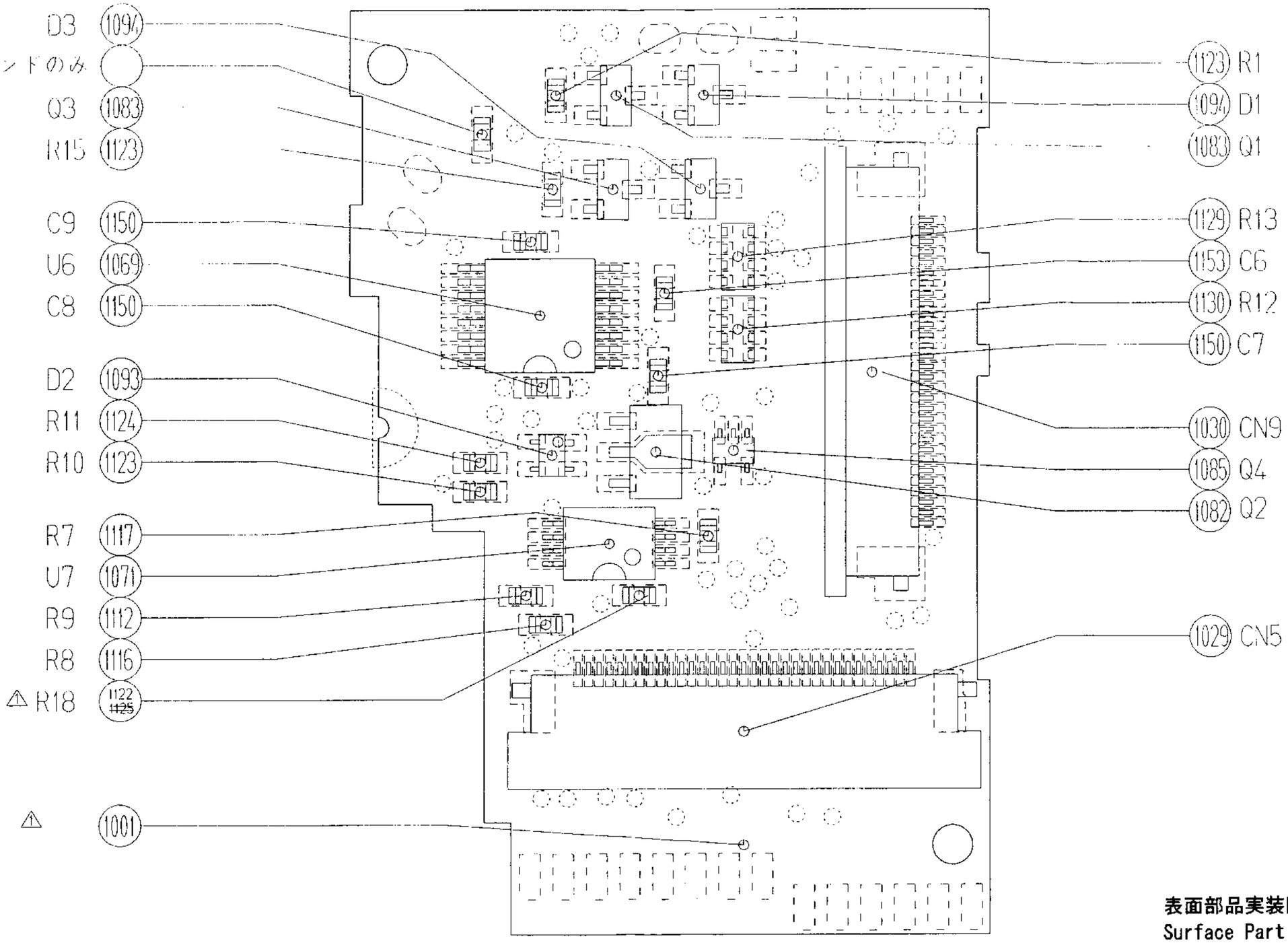
Built-in flash control circuit
内蔵ストロボ制御回路

Built-in flash tube
内蔵ストロボ閃光管

Lithium battery
リチウム電池
CR2×2

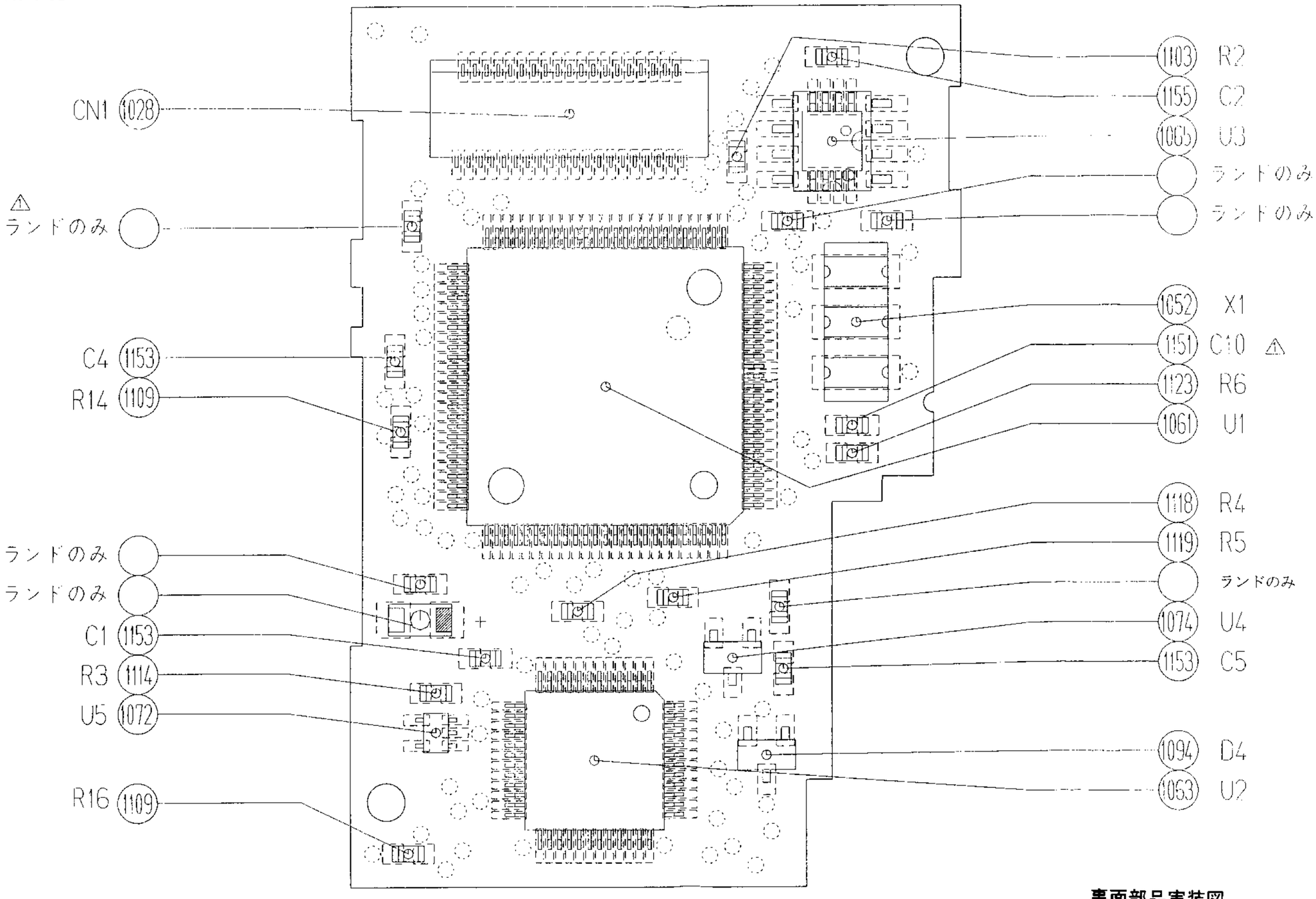
注>
- □ は、コネクタ接続を示す
- ○ は、リード線接続を示す
- D は、半田ブリッジ接続を示す
- ⊖ は、チェックランドを示す

メイン基板
MAIN PCB



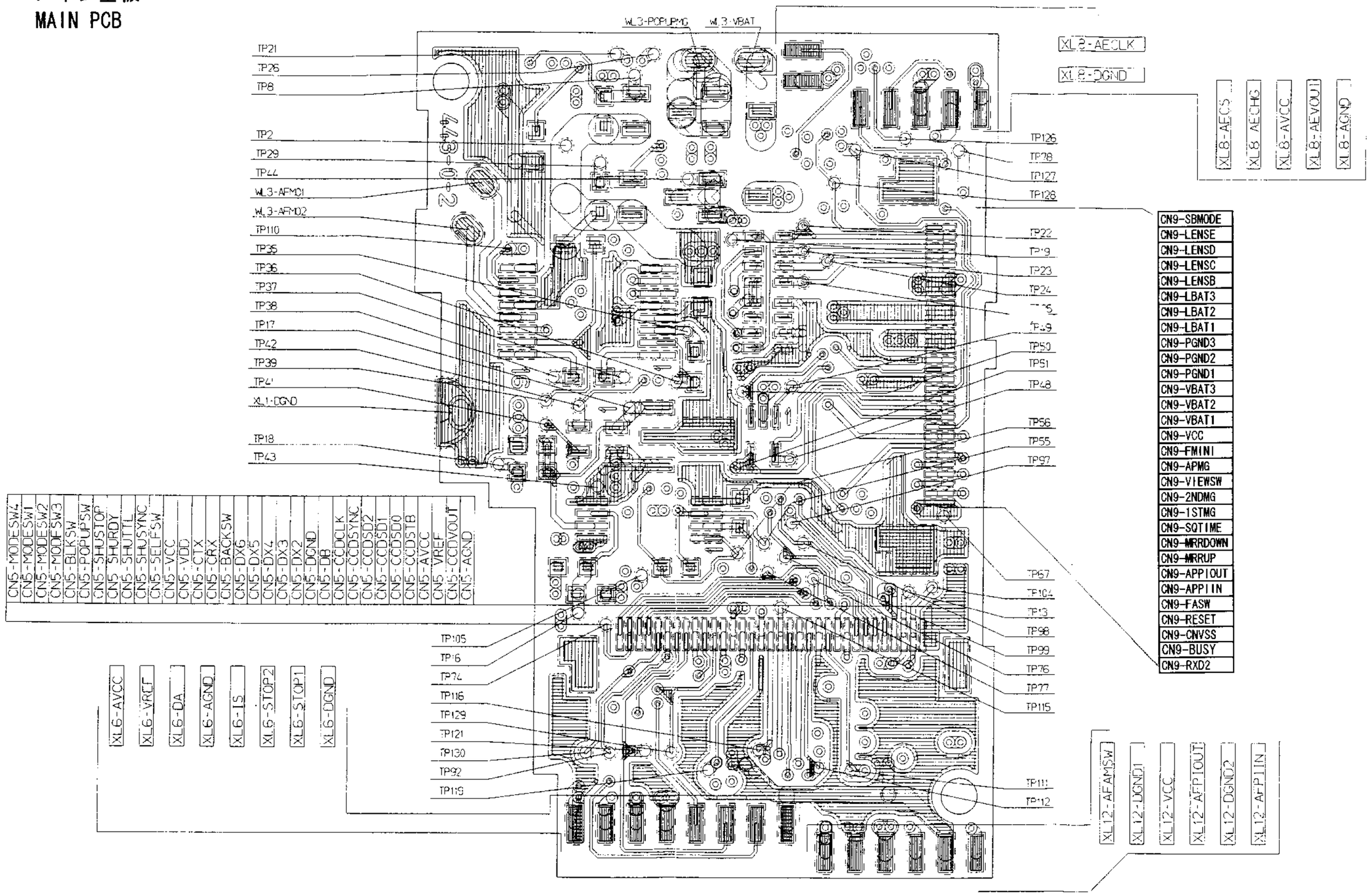
表面部品実装図
Surface Part mount figure

メイン基板
MAIN PCB



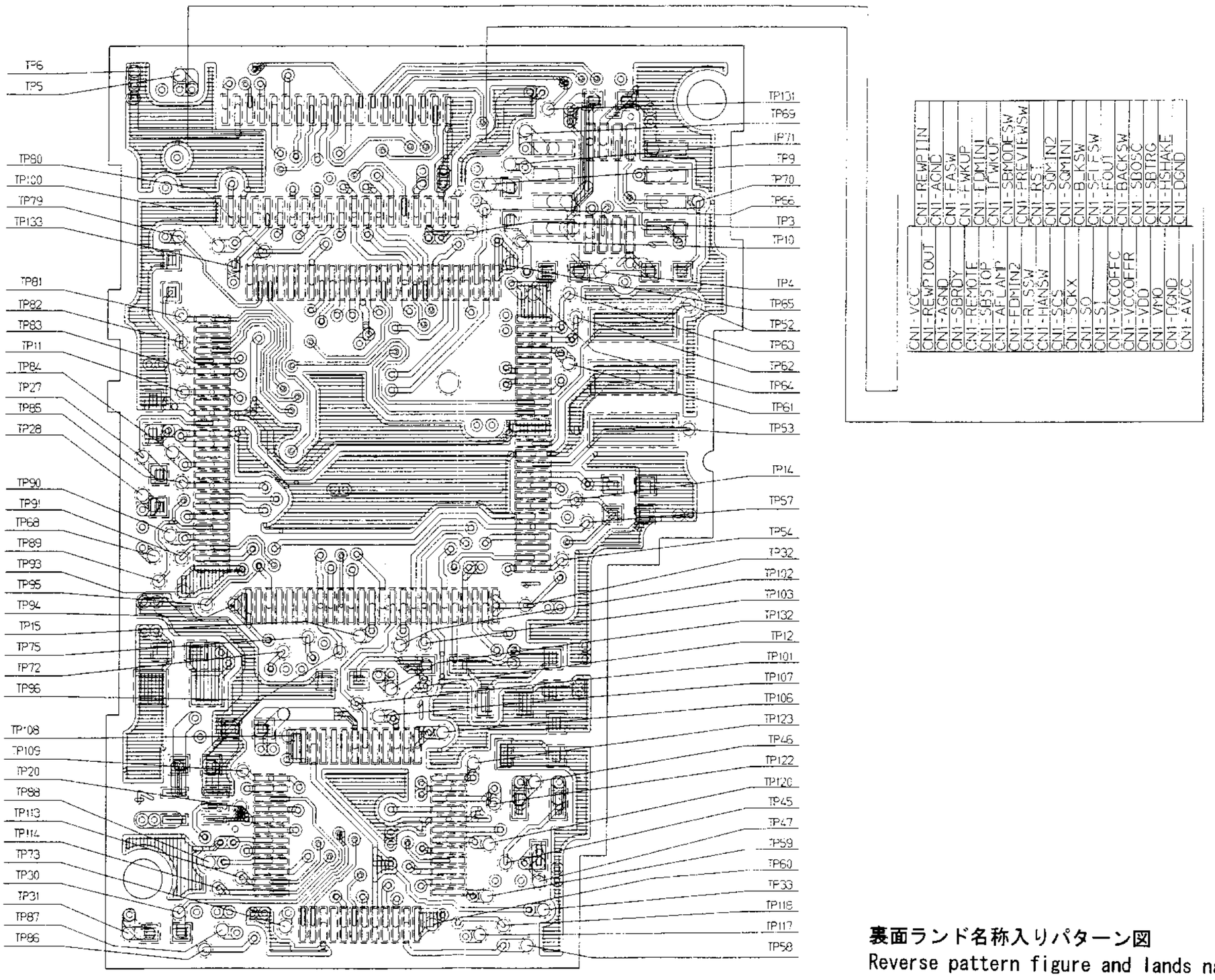
裏面部品実装図
Reverse Parts mount figure

メイン基板
MAIN PCB



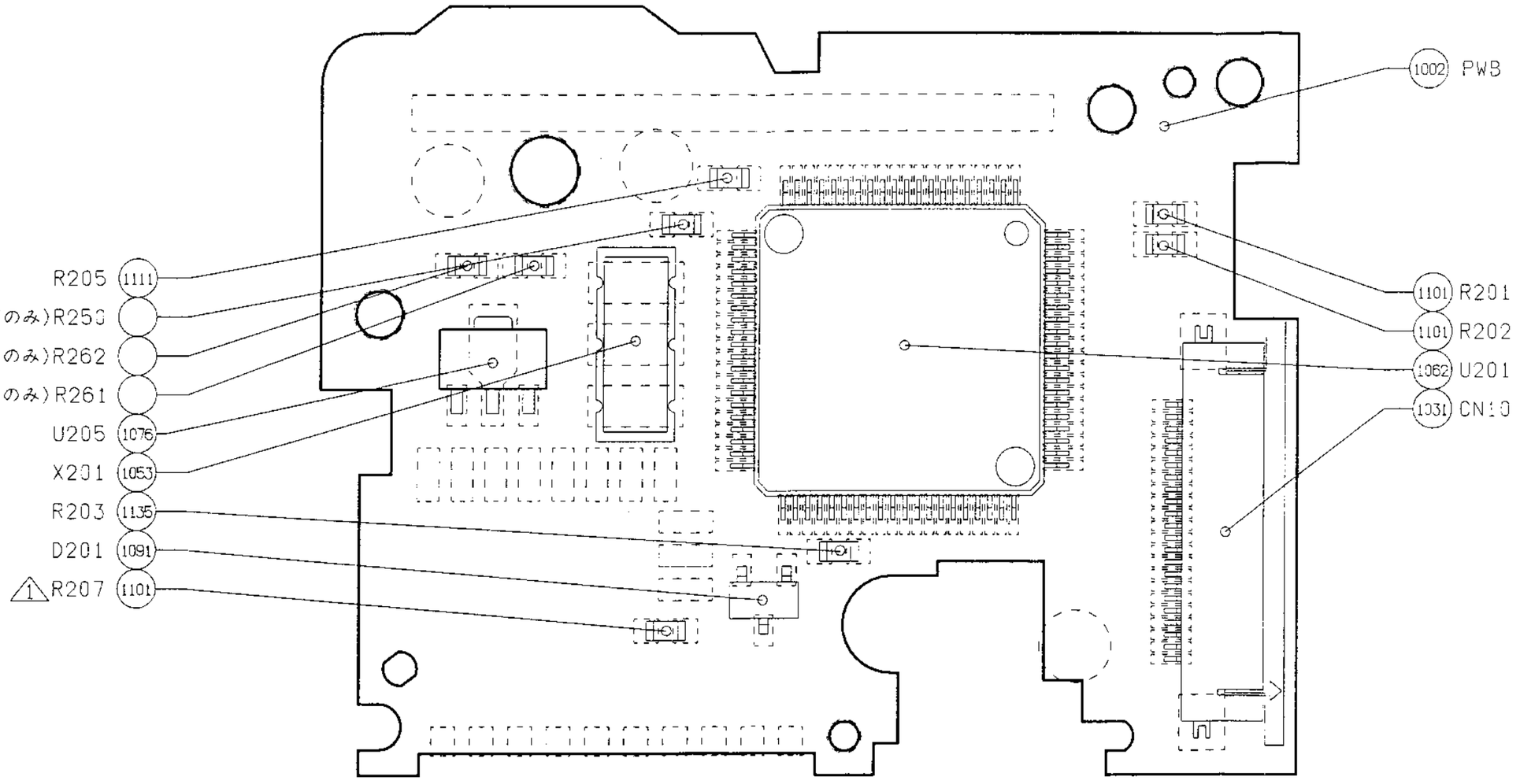
表面ランド名称入りパターン図
Surface pattern figure and lands name

メイン基板
MAIN PCB



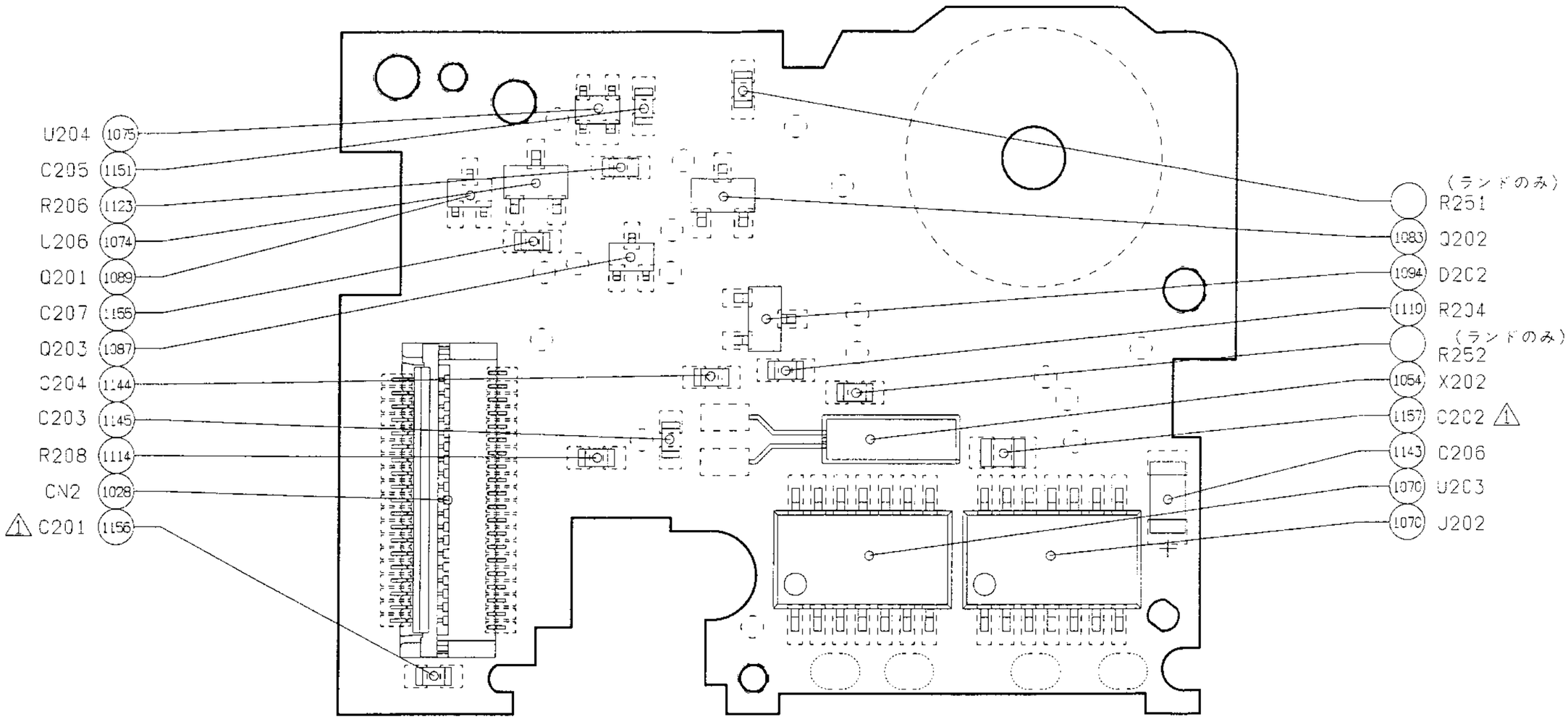
裏面ランド名称入りパターン図
Reverse pattern figure and lands name

サブ基板
SUB PCB



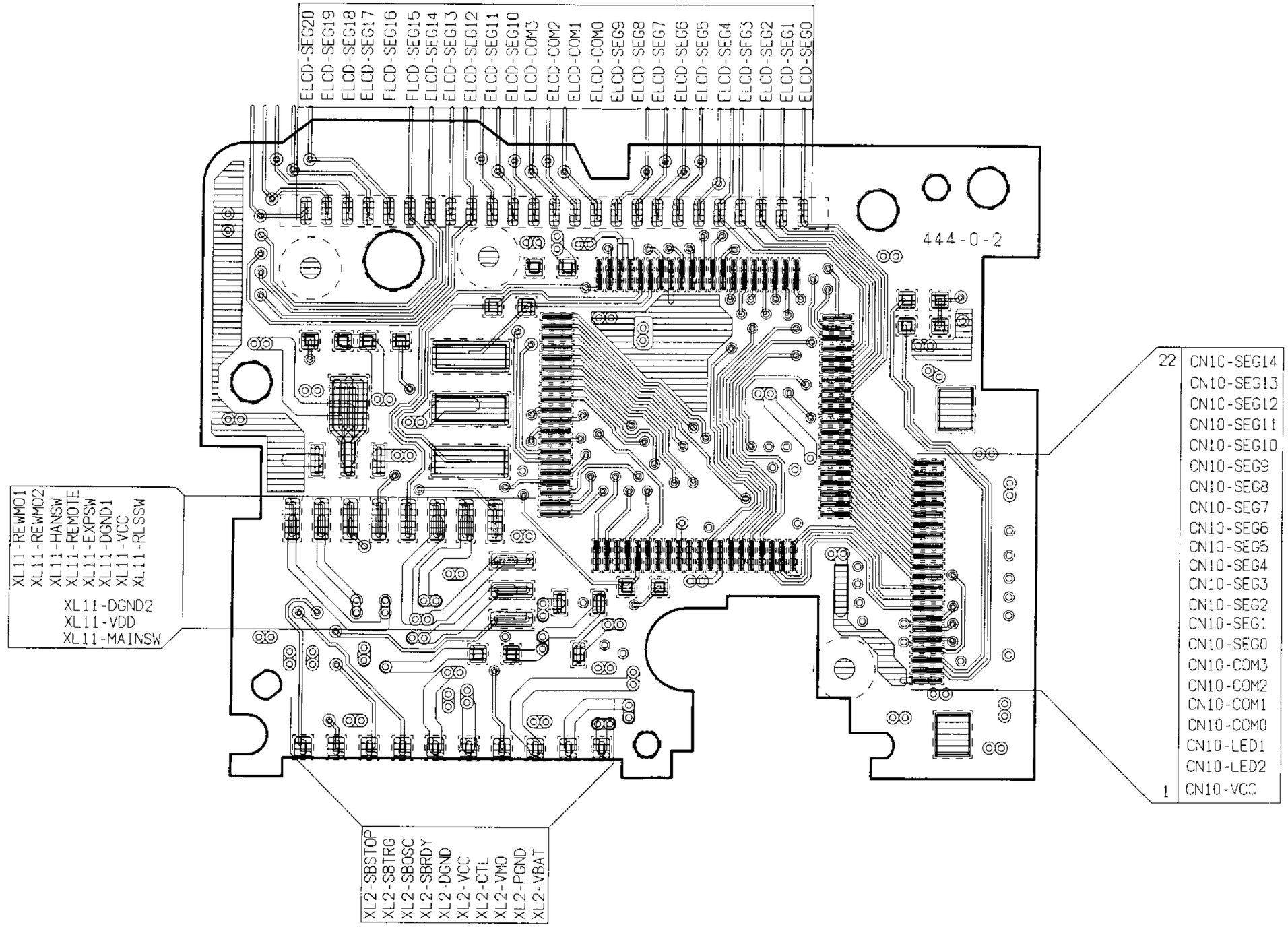
表面部品実装図
Surface Part mount figure

サブ基板
SUB PCB



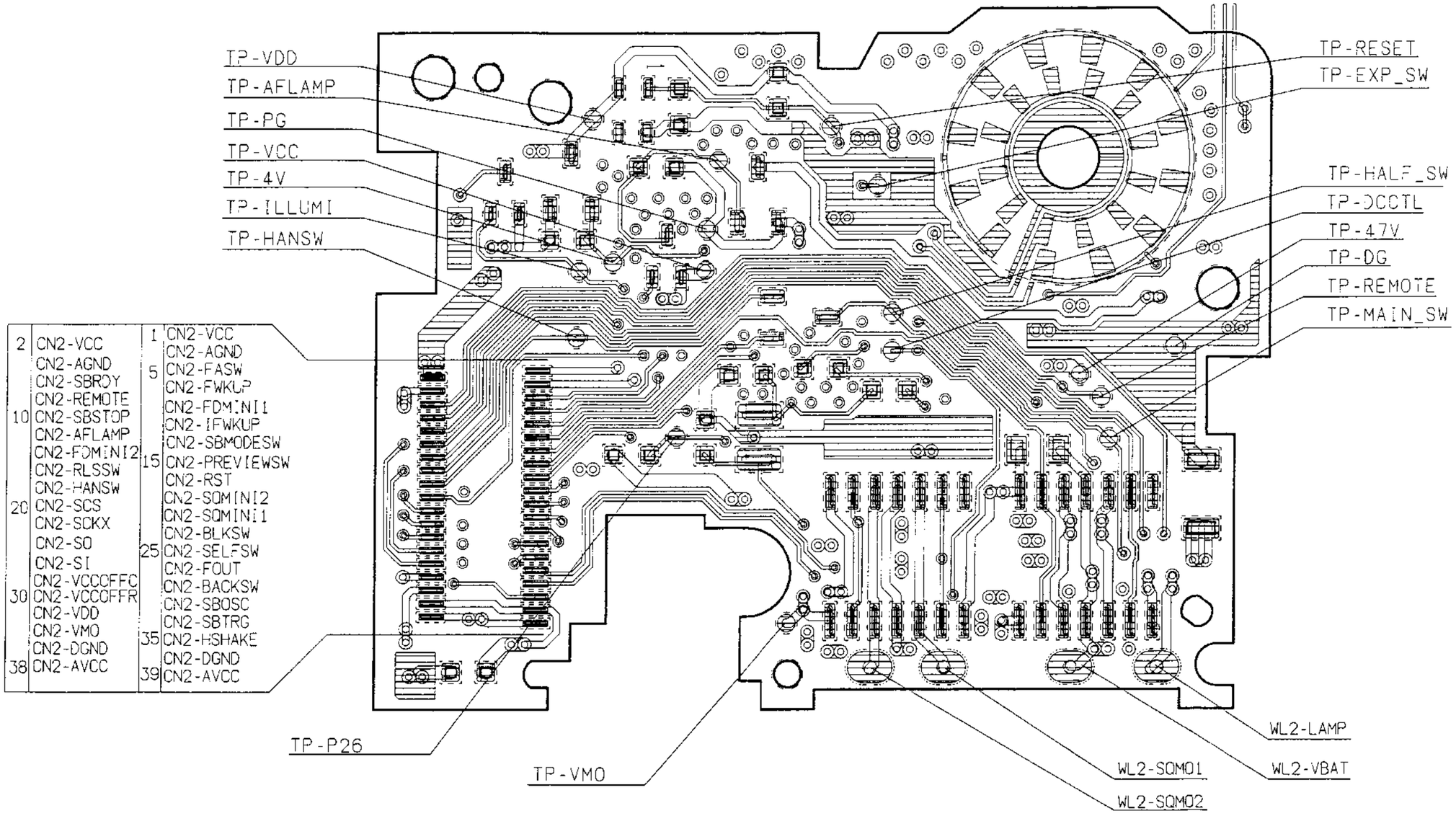
裏面部品実装図
Reverse Parts mount figure

サブ基板
SUB PSB



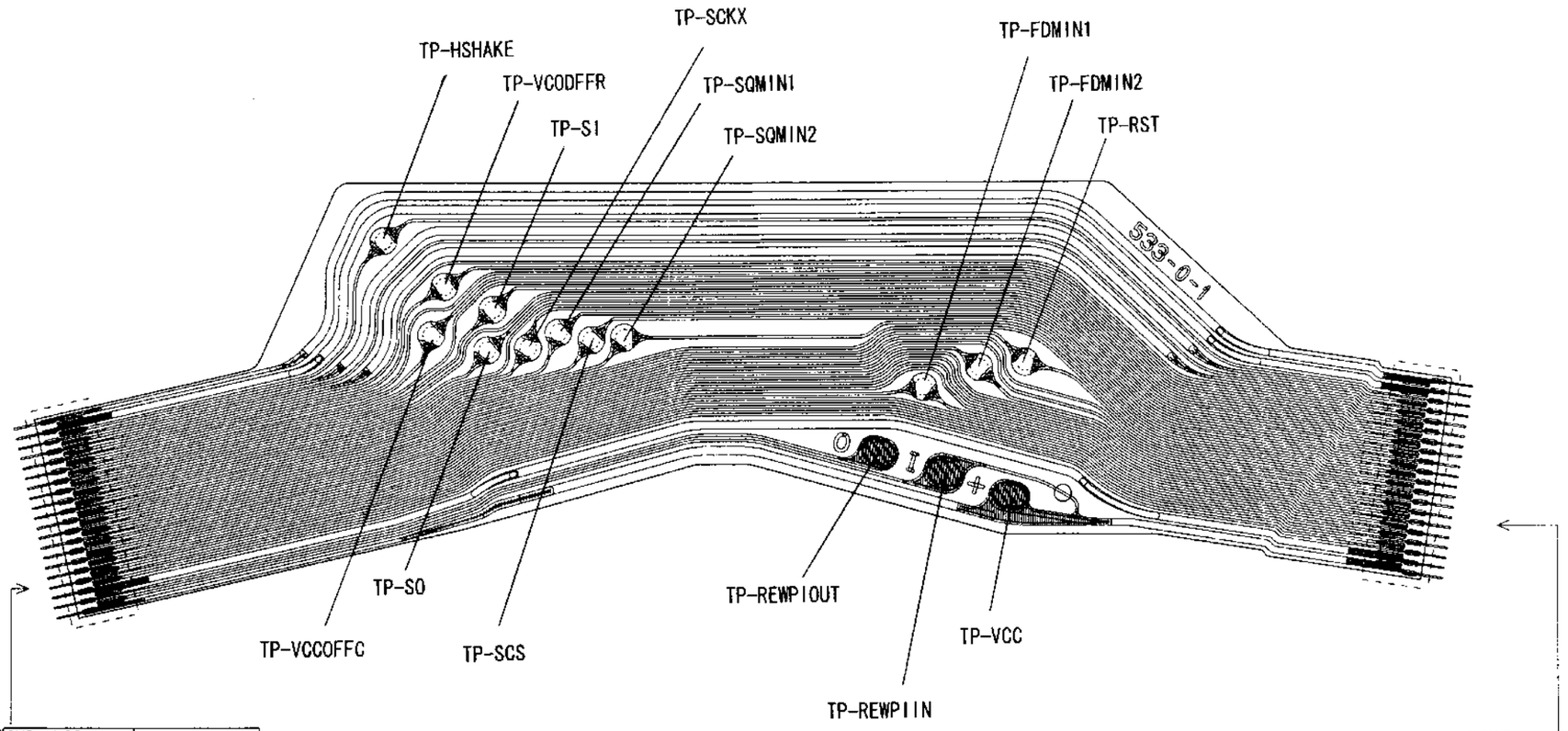
表面ランド名称入りパターン図
Surface pattern figure and lands name

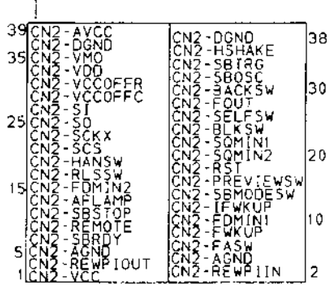
サブ基板
SUB PCB

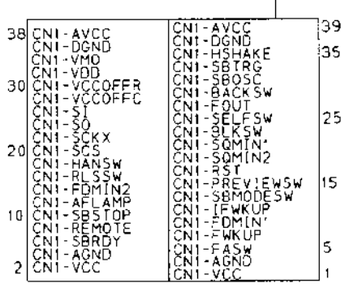


裏面ランド名称入りパターン図
Reverse pattern figure and lands name

接続ＦＰＣ
CONNECTED FPC

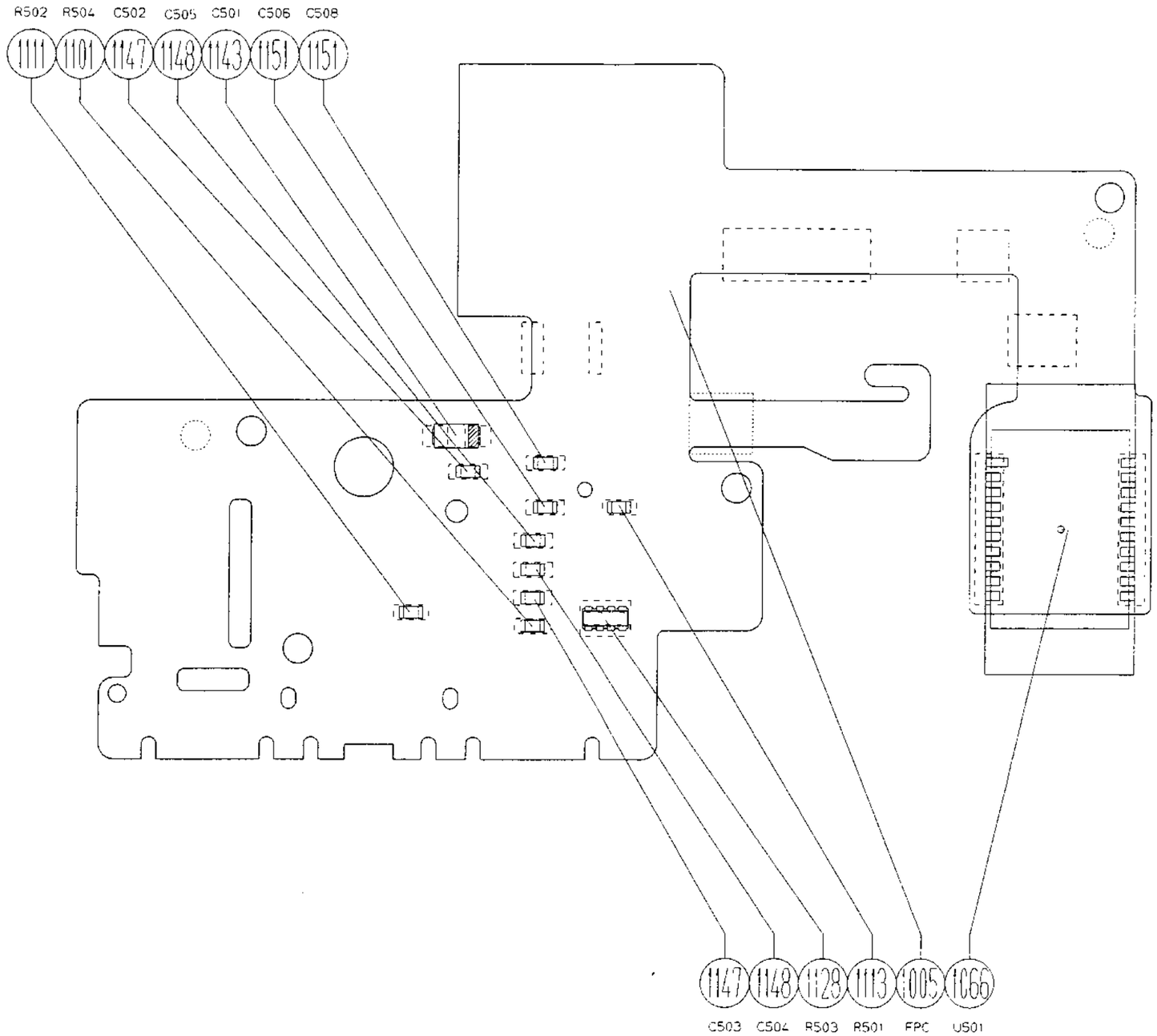






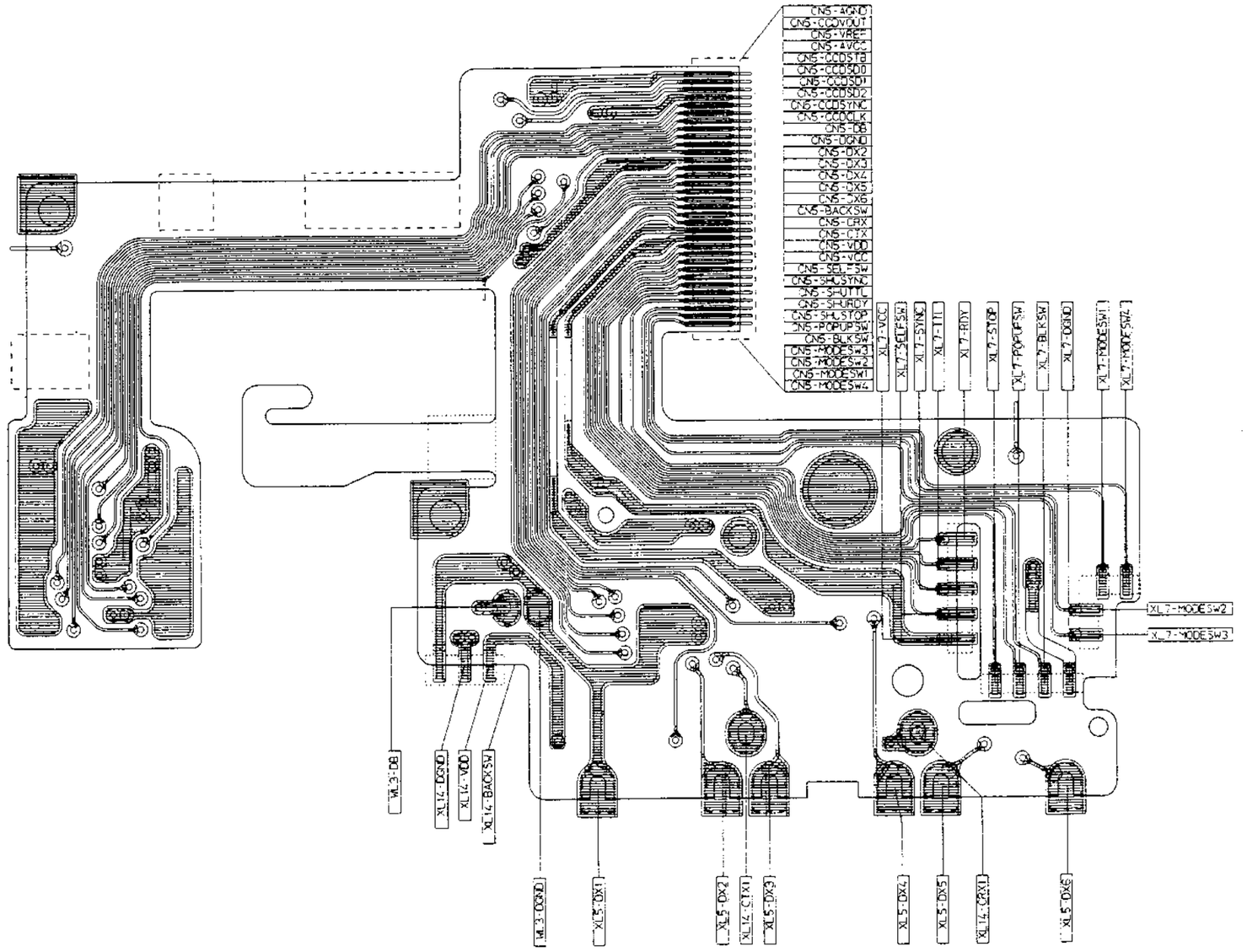
表面ランド名称入りパターン図
Surface pattern figure and lands name

CCD FPC



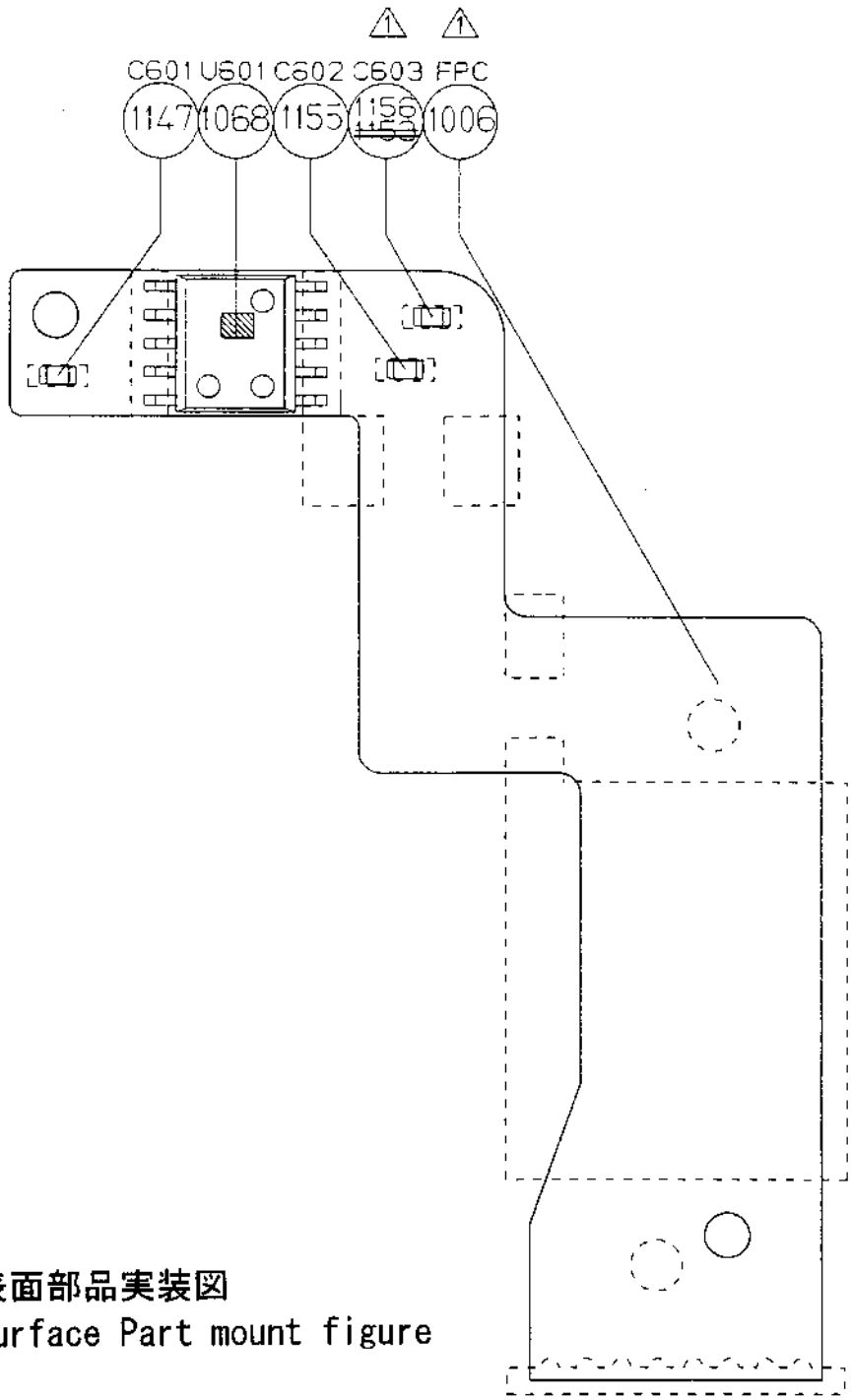
表面部品実装図
Surface Part mount figure

CCD FPC



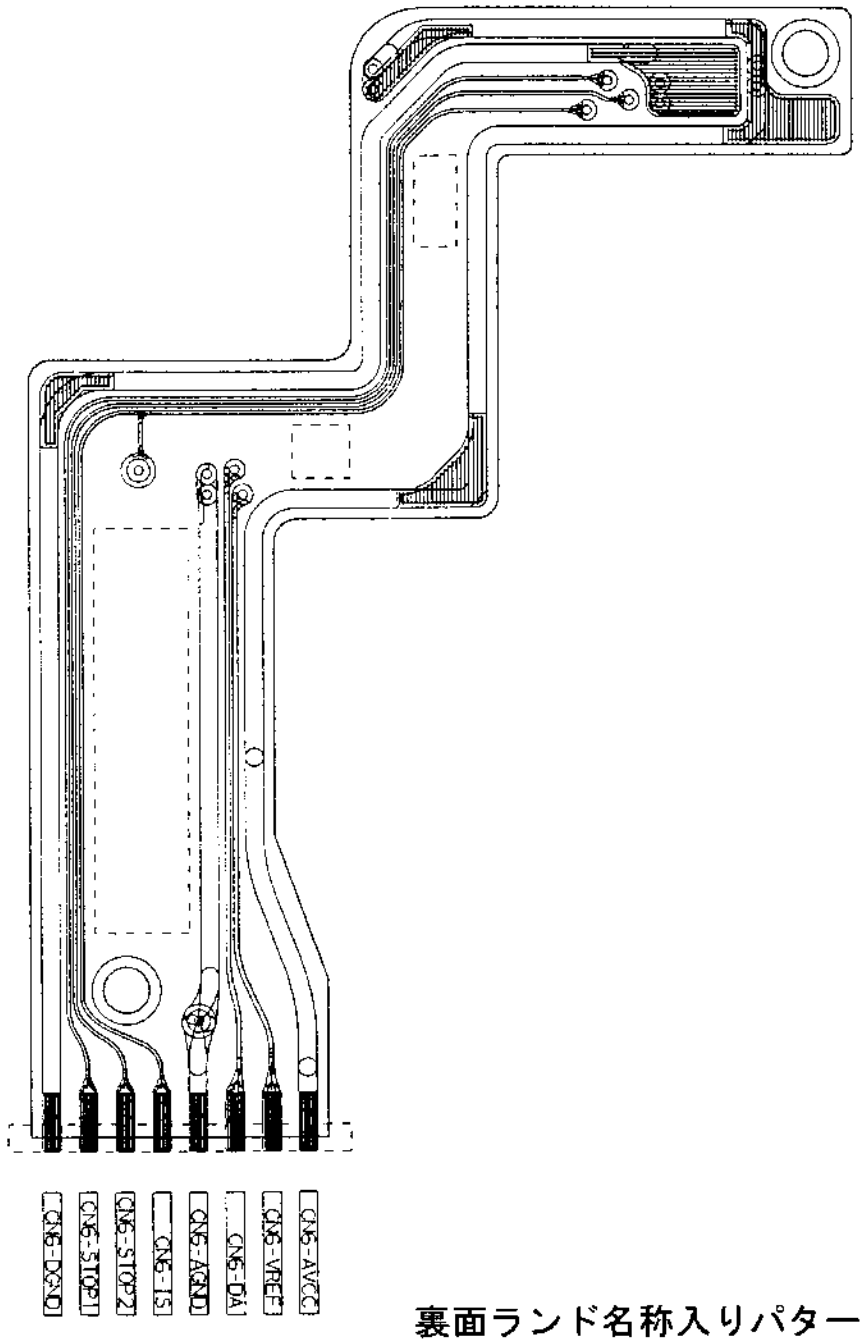
裏面ランド名称入りパターン図
Reverse pattern figure and lands name

ＴＴＬ ＦＰＣ



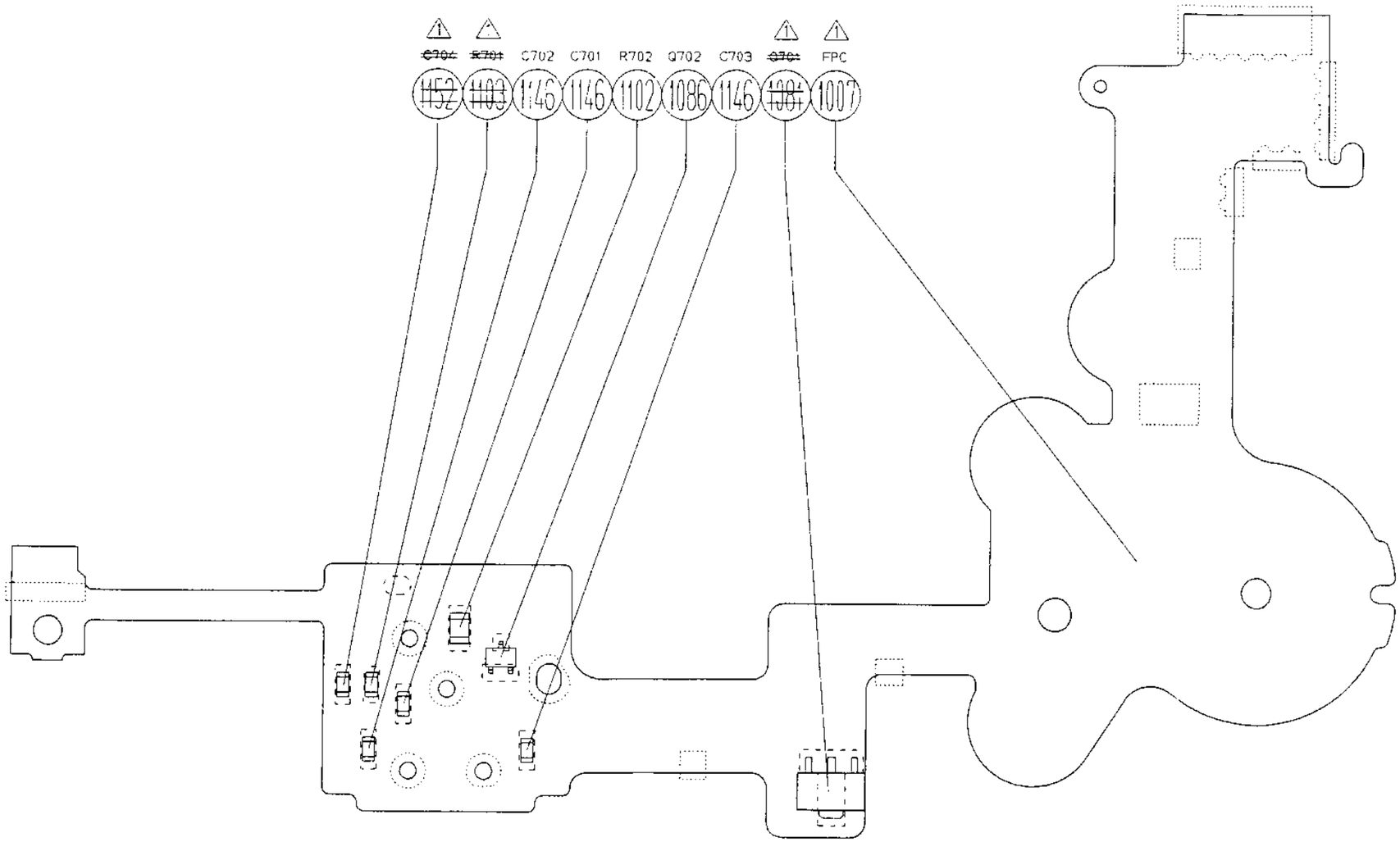
表面部品実装図
Surface Part mount figure

ＴＴＬ ＦＰＣ



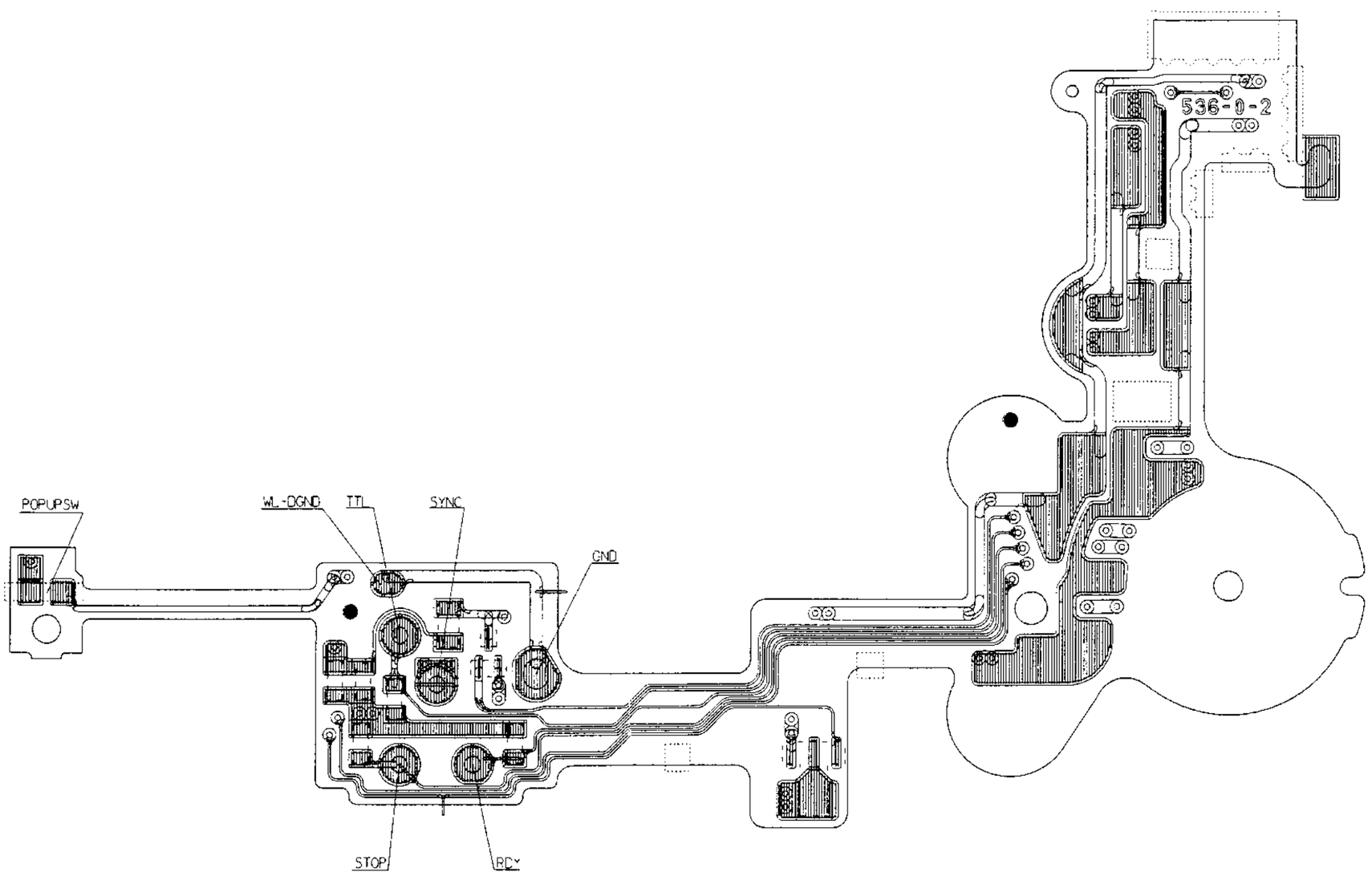
裏面ランド名称入りパターン図
Reverse pattern figure and lands name

上カバーＦＰＣ
TOP COVER FPC



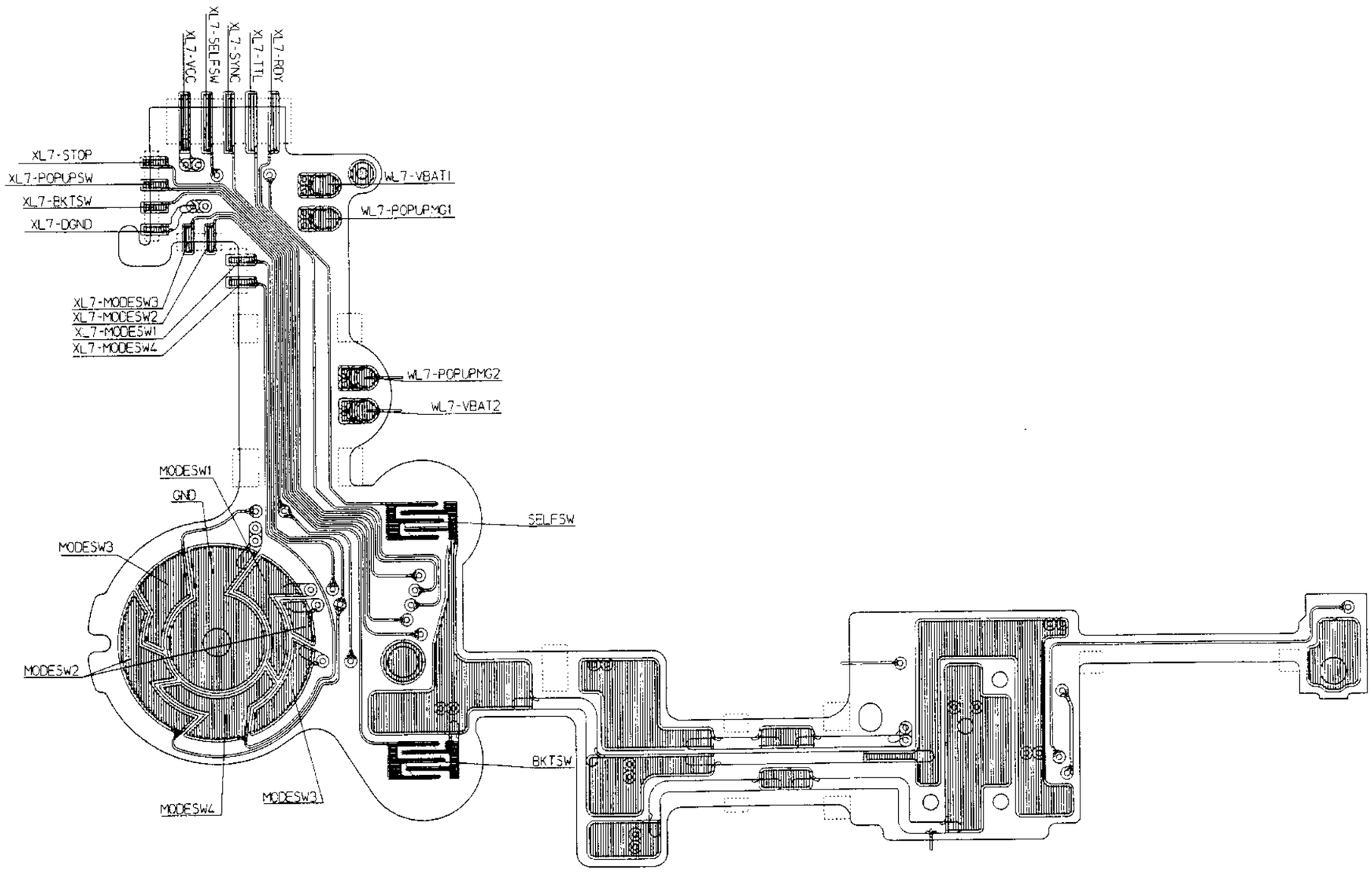
表面部品実装図
Surface Part mount figure

上カバーＦＰＣ
TOP COVER FPC



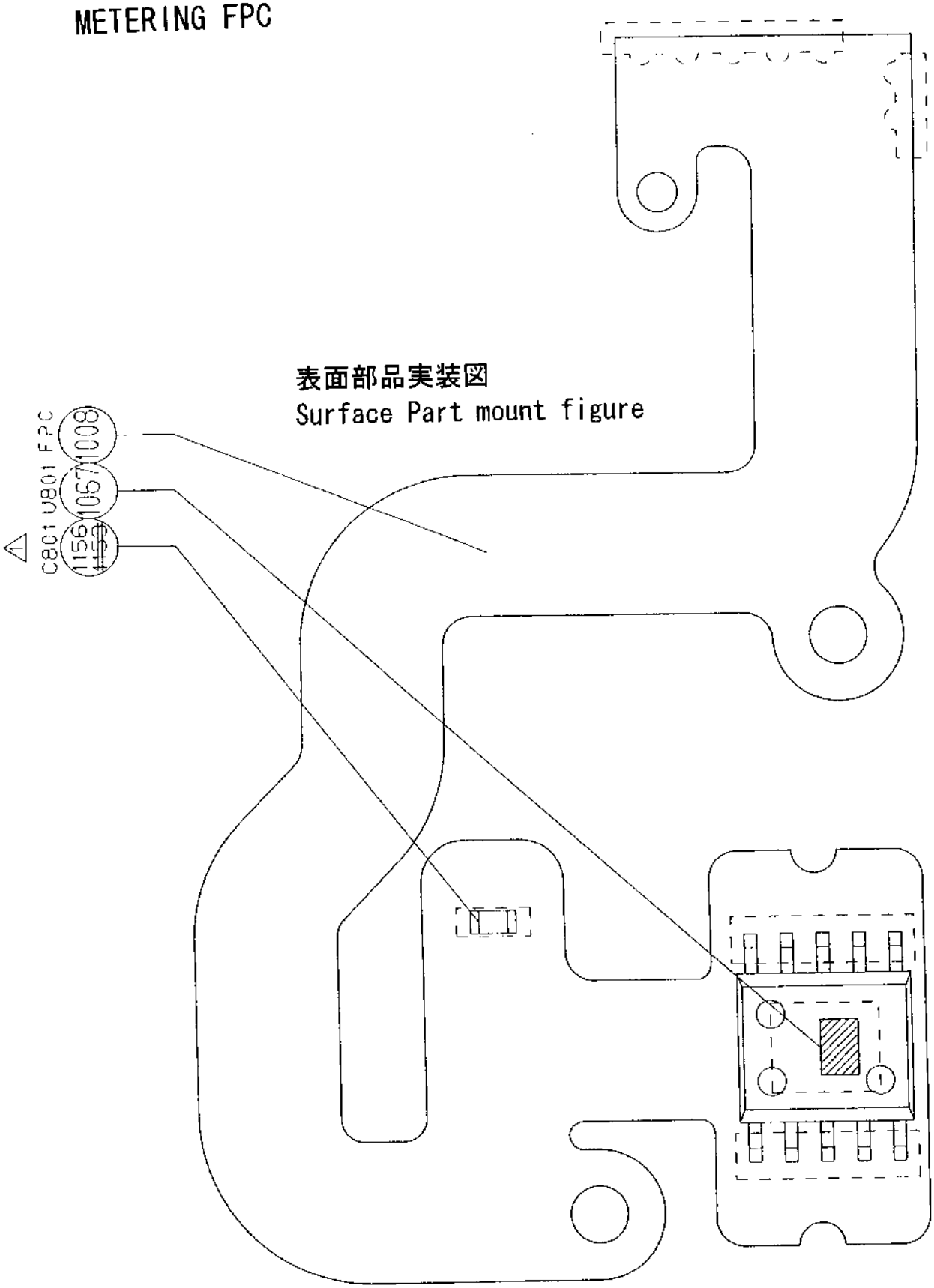
表面ランド名称入りパターン図
Surface pattern figure and lands name

上カバーＦＰＣ
TOP COVER FPC

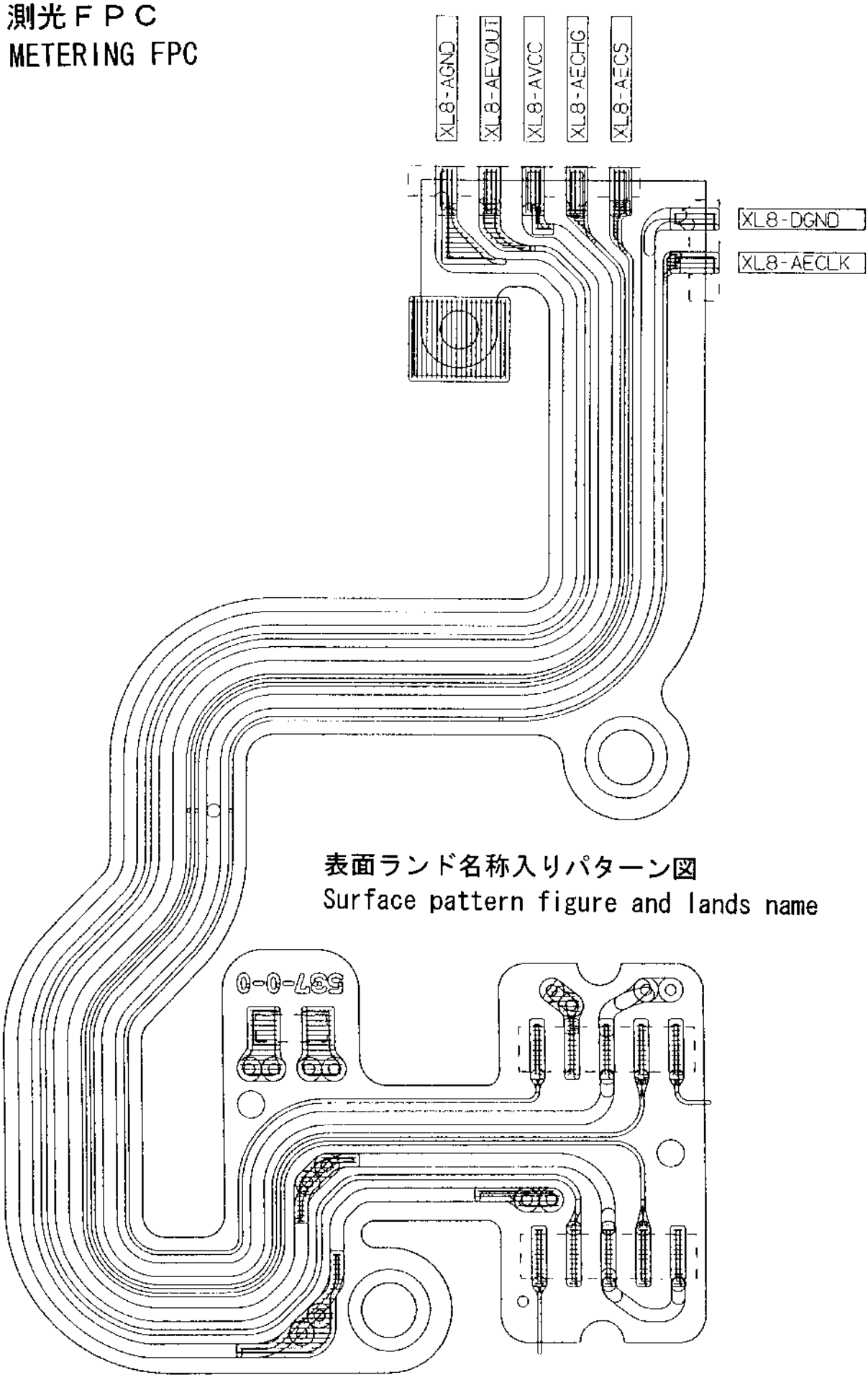


裏面ランド名称入りパターン図
Reverse pattern figure and lands name

測光ＦＰＣ
METERING FPC

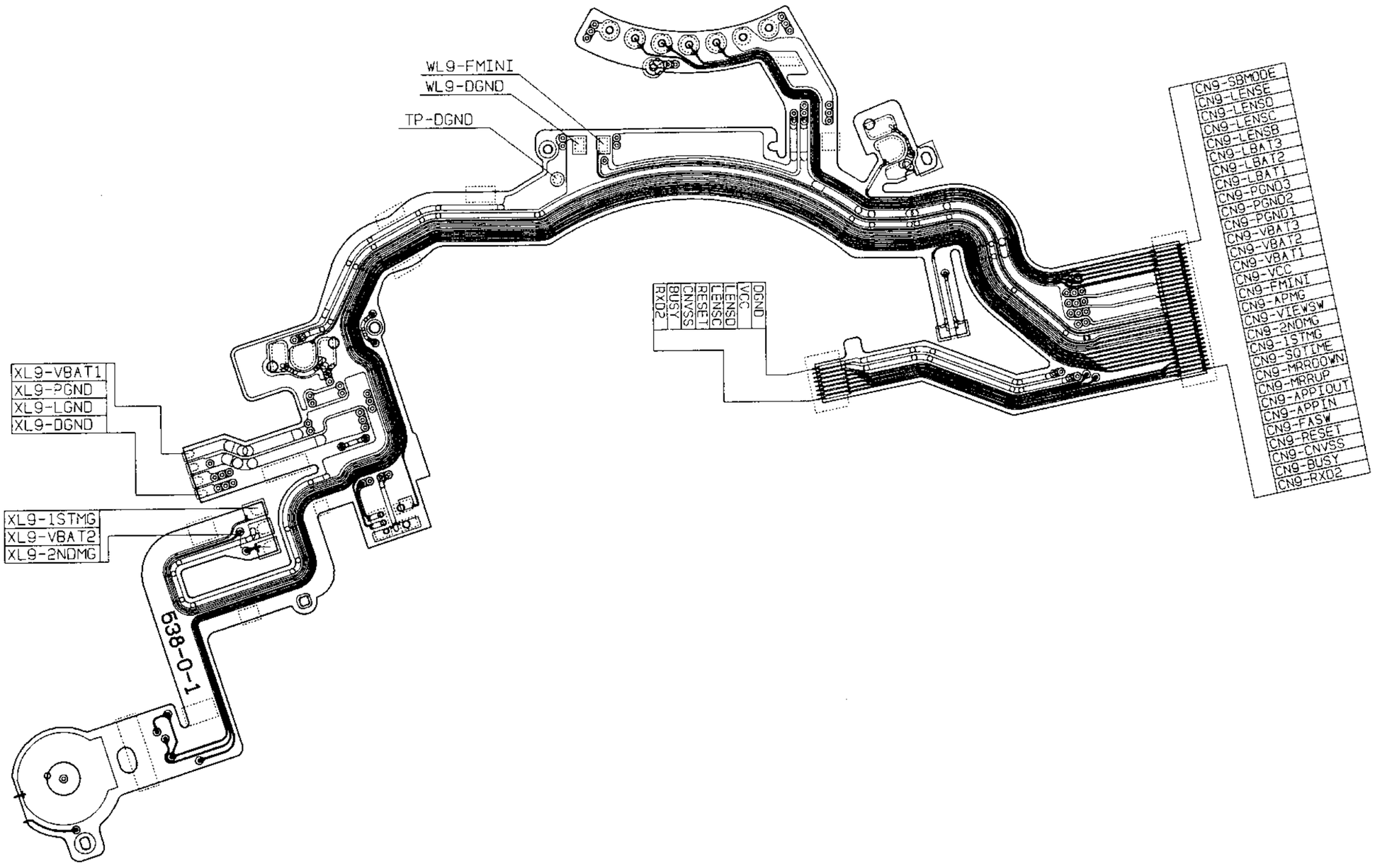


測光ＦＰＣ
METERING FPC



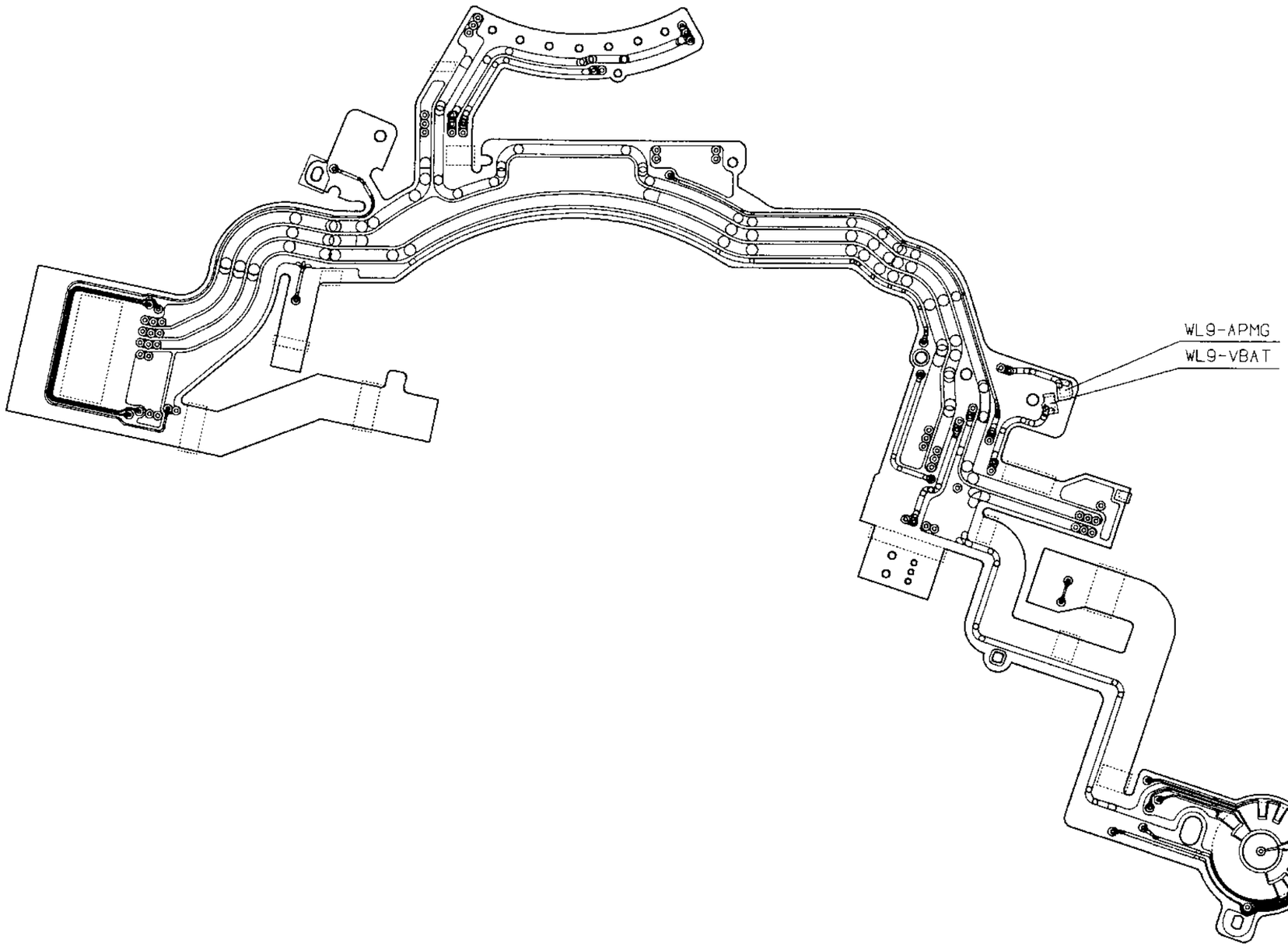
表面ランド名称入りパターン図
Surface pattern figure and lands name

前ボディＦＰＣ
FRONT BODY FPC



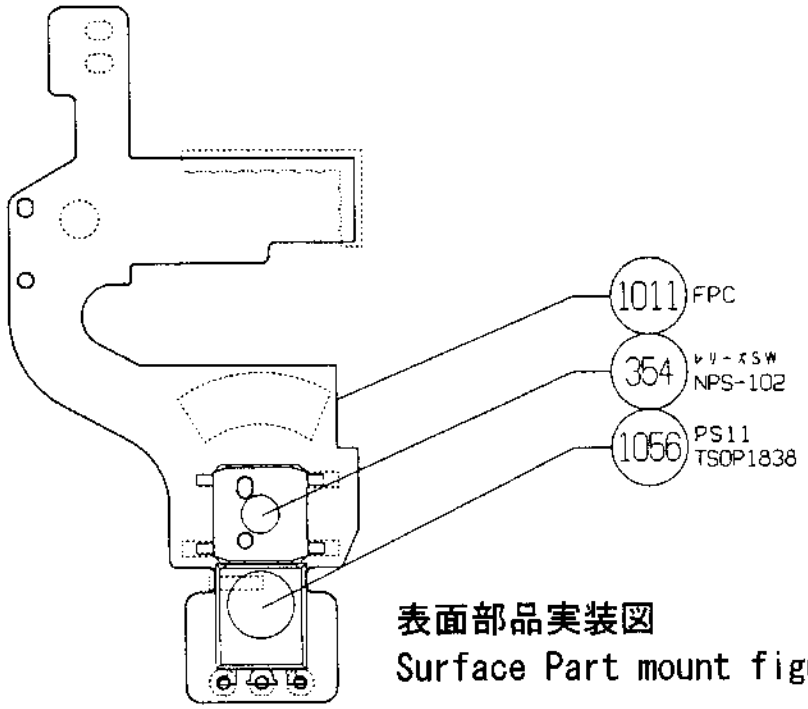
表面ランド名称図
Surface lands name figure

前ボディＦＰＣ
FRONT BODY FPC

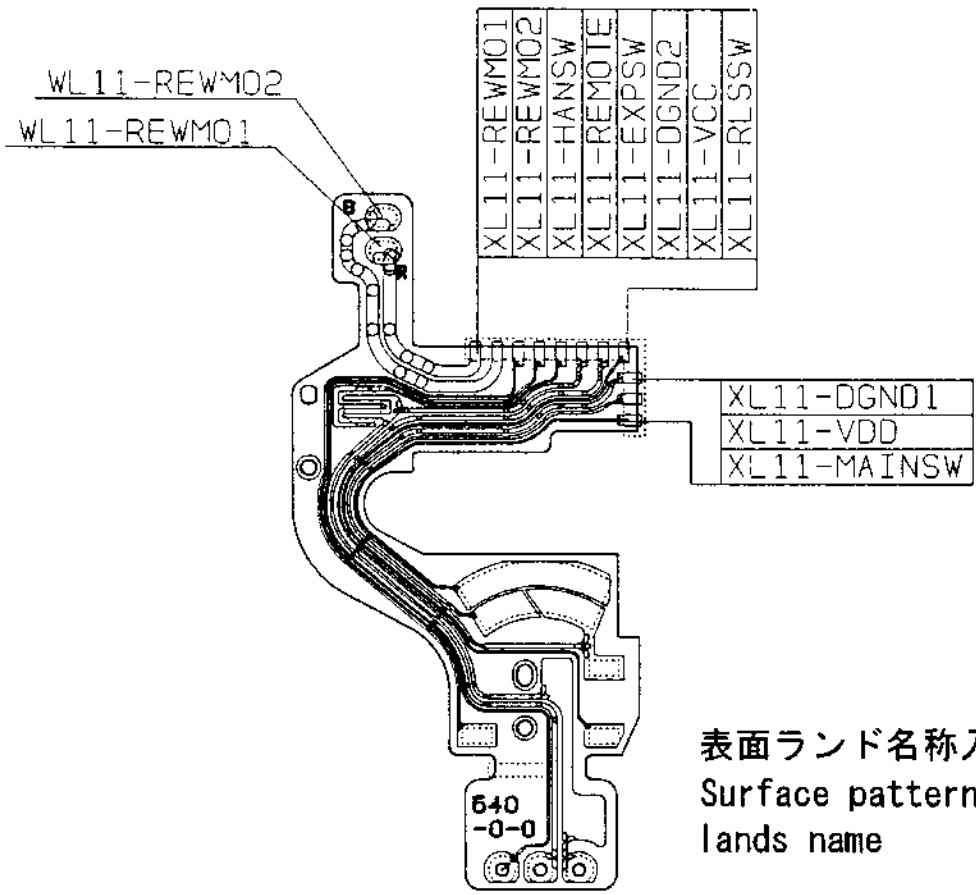


裏面ランド名称図
Reverse land name figure

メインSW　FPC
MAIN SW FPC

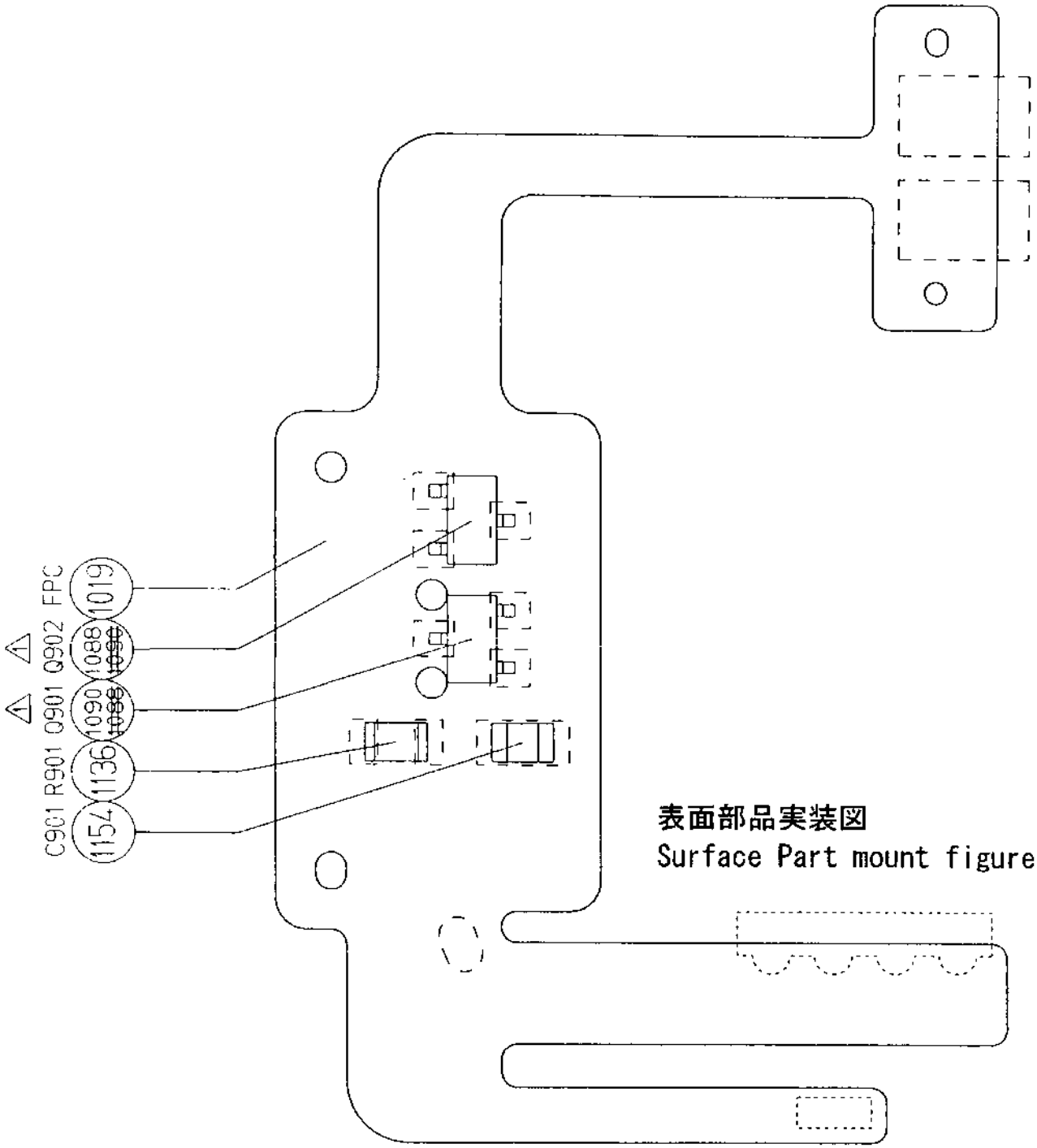


表面部品実装図
Surface Part mount figure



表面ランド名称入りパターン図
Surface pattern figure and lands name

DB FPC

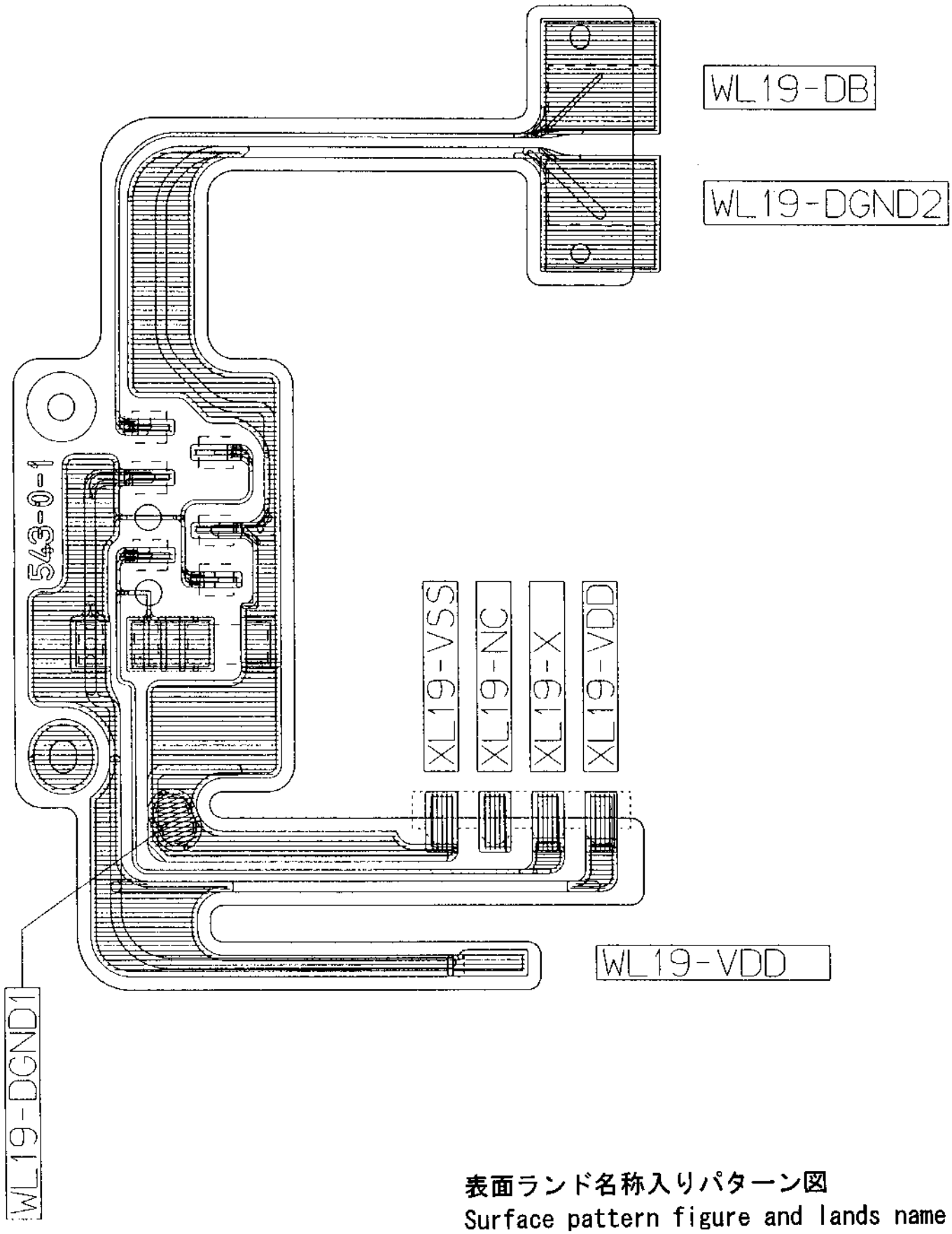


表面部品実装図
Surface Part mount figure

Change page (差替え) ⚠1 x2

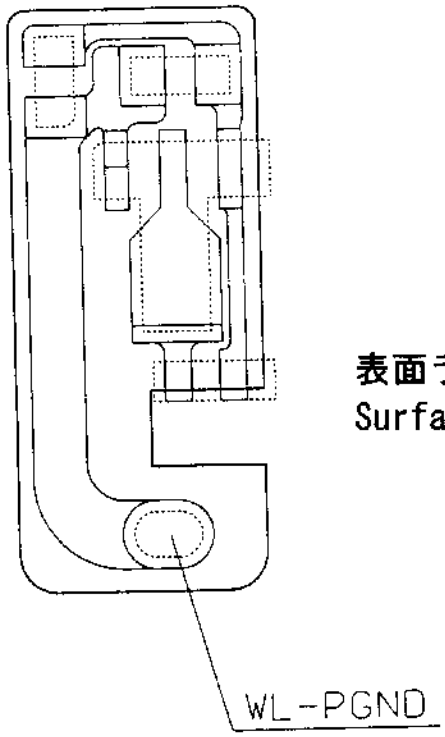
May.10, 2001

DB FPC

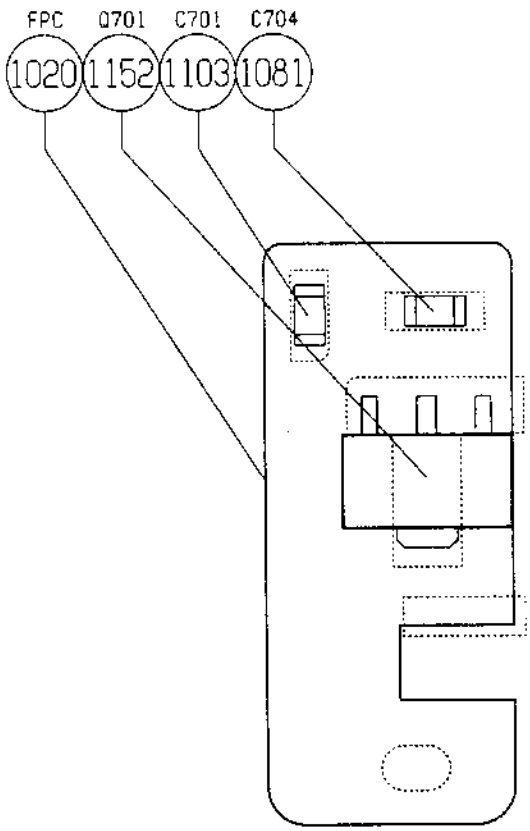


表面ランド名称入りパターン図
Surface pattern figure and lands name

ホットシュー暫定ＦＰＣ
HOT SHOE TEMPORARILY ARRANGED FPC

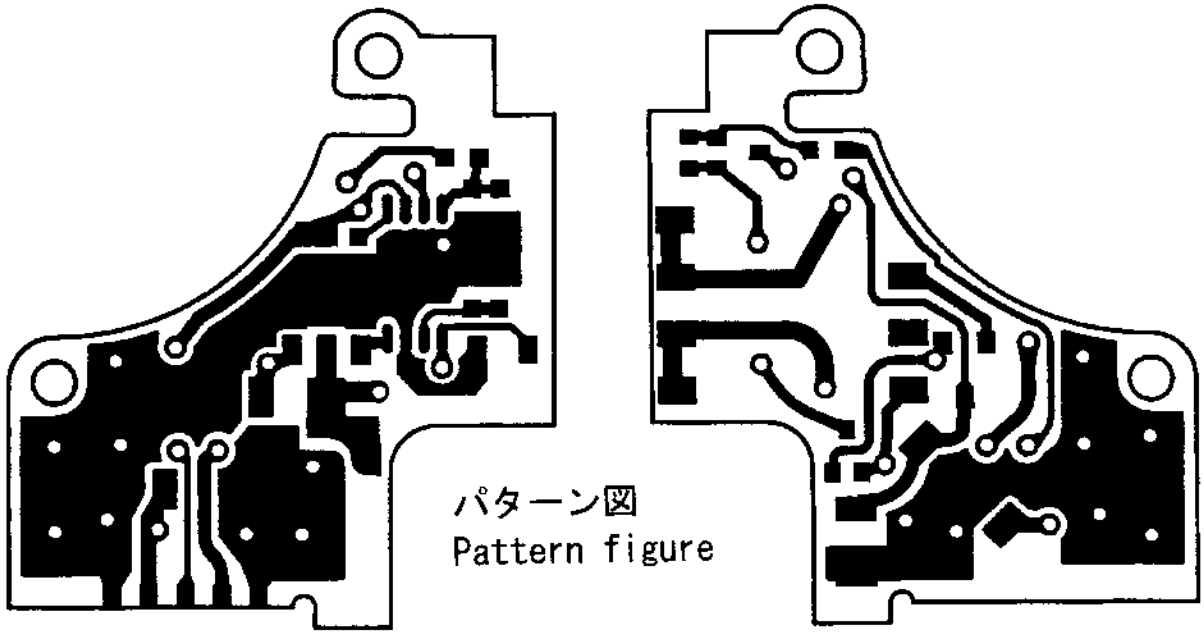


表面ランド名称図
Surface lands name figure

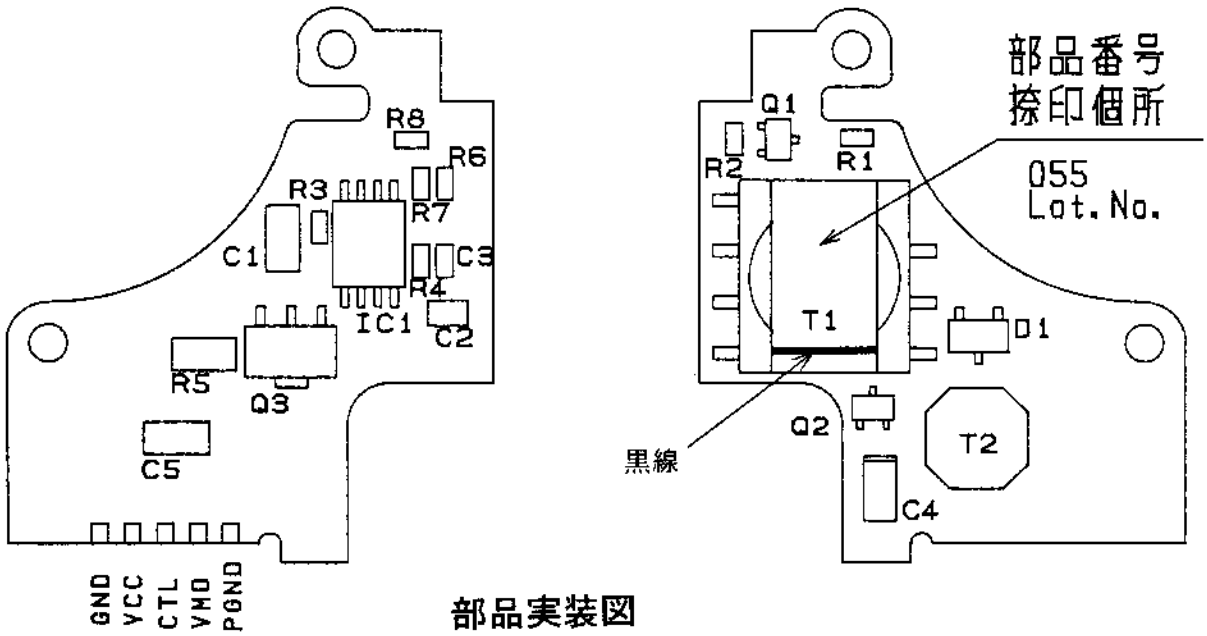


表面部品実装図
Surface Part mount figure

ＤＣ－ＤＣコンバーター
DC-DC CONVERTER



パターン図
Pattern figure



部品実装図
Part mount figure

F65 / N65 / U EEPROM DATA

2000-10-10

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
0	AF ADJUSTMENT DATA	41					
1	AF ADJUSTMENT DATA	2					
2	CAMERA CONTROL DATA	0					
3	CAMERA CONTROL DATA	2					
4	CAMERA CONTROL DATA	0					
|	|	|					
9	CAMERA CONTROL DATA	0					
10	AF ADJUSTMENT DATA	0					
|	|	|					
59	AF ADJUSTMENT DATA	0					
60	MBF ADJUSTMENT DATA	0					
61	MBF ADJUSTMENT DATA	0					
62	CAMERA CONTROL DATA	0					
63	CAMERA CONTROL DATA	0					
64	CAMERA CONTROL DATA	193					
65	CAMERA CONTROL DATA	153					
66	CAMERA CONTROL DATA	193					
67	CAMERA CONTROL DATA	102					
68	CAMERA CONTROL DATA	196					
69	CAMERA CONTROL DATA	153					
70	CAMERA CONTROL DATA	63					
71	CAMERA CONTROL DATA	51					
72	CAMERA CONTROL DATA	65					
73	CAMERA CONTROL DATA	0					
74	CAMERA CONTROL DATA	63					
75	CAMERA CONTROL DATA	102					
76	CAMERA CONTROL DATA	66					
77	CAMERA CONTROL DATA	128					
78	CAMERA CONTROL DATA	53					
79	CAMERA CONTROL DATA	137					
80	CAMERA CONTROL DATA	53					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
81	CAMERA CONTROL DATA	137					
82	CAMERA CONTROL DATA	53					
83	CAMERA CONTROL DATA	6					
84	CAMERA CONTROL DATA	55					
85	CAMERA CONTROL DATA	6					
86	CAMERA CONTROL DATA	59					
87	CAMERA CONTROL DATA	153					
88	CAMERA CONTROL DATA	60					
89	CAMERA CONTROL DATA	153					
90	CAMERA CONTROL DATA	59					
91	CAMERA CONTROL DATA	153					
92	CAMERA CONTROL DATA	63					
93	CAMERA CONTROL DATA	102					
94	CAMERA CONTROL DATA	54					
95	CAMERA CONTROL DATA	71					
96	CAMERA CONTROL DATA	0					
97	CAMERA CONTROL DATA	2					
98	CAMERA CONTROL DATA	80					
99	CAMERA CONTROL DATA	0					
100	CAMERA CONTROL DATA	80					
101	CAMERA CONTROL DATA	0					
102	CAMERA CONTROL DATA	200					
103	CAMERA CONTROL DATA	0					
104	CAMERA CONTROL DATA	63					
105	CAMERA CONTROL DATA	102					
106	CAMERA CONTROL DATA	54					
107	CAMERA CONTROL DATA	71					
108	CAMERA CONTROL DATA	54					
109	CAMERA CONTROL DATA	6					
110	CAMERA CONTROL DATA	53					
111	CAMERA CONTROL DATA	137					

ADDRESS	CONTENTS	CPU					REMARK
		MP1 03.03 or later					
112	CAMERA CONTROL DATA	53					
113	CAMERA CONTROL DATA	137					
114	CAMERA CONTROL DATA	0					
|	|	|					
119	CAMERA CONTROL DATA	0					
120	CAMERA CONTROL DATA	128					
121	CAMERA CONTROL DATA	0					
122	CAMERA CONTROL DATA	96					
123	CAMERA CONTROL DATA	0					
124	CAMERA CONTROL DATA	0					
125	CAMERA CONTROL DATA	1					
126	CAMERA CONTROL DATA	0					
|	|	|					
129	CAMERA CONTROL DATA	0					
130	CAMERA CONTROL DATA	81					
131	CAMERA CONTROL DATA	24					
132	CAMERA CONTROL DATA	0					
133	CAMERA CONTROL DATA	5					
134	CAMERA CONTROL DATA	59					
135	CAMERA CONTROL DATA	0					
136	CAMERA CONTROL DATA	60					
137	CAMERA CONTROL DATA	18					
138	CAMERA CONTROL DATA	0					
139	CAMERA CONTROL DATA	0					
140	CAMERA CONTROL DATA	0					
141	CAMERA CONTROL DATA	5					
142	CAMERA CONTROL DATA	59					
143	CAMERA CONTROL DATA	0					
144	CAMERA CONTROL DATA	60					
145	CAMERA CONTROL DATA	18					
146	CAMERA CONTROL DATA	0					
147	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
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149	CAMERA CONTROL DATA	5					
150	CAMERA CONTROL DATA	56					
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152	CAMERA CONTROL DATA	39					
153	CAMERA CONTROL DATA	20					
154	CAMERA CONTROL DATA	0					
155	CAMERA CONTROL DATA	0					
156	CAMERA CONTROL DATA	25					
157	CAMERA CONTROL DATA	5					
158	CAMERA CONTROL DATA	56					
159	CAMERA CONTROL DATA	0					
160	CAMERA CONTROL DATA	39					
161	CAMERA CONTROL DATA	20					
162	CAMERA CONTROL DATA	0					
163	CAMERA CONTROL DATA	0					
164	CAMERA CONTROL DATA	64					
165	CAMERA CONTROL DATA	28					
166	CAMERA CONTROL DATA	32					
167	CAMERA CONTROL DATA	0					
168	CAMERA CONTROL DATA	39					
169	CAMERA CONTROL DATA	0					
170	CAMERA CONTROL DATA	0					
171	CAMERA CONTROL DATA	0					
172	CAMERA CONTROL DATA	76					
173	CAMERA CONTROL DATA	50					
174	CAMERA CONTROL DATA	32					
175	CAMERA CONTROL DATA	0					
176	CAMERA CONTROL DATA	39					
177	CAMERA CONTROL DATA	24					
178	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
179	CAMERA CONTROL DATA	0					
180	CAMERA CONTROL DATA	76					
181	CAMERA CONTROL DATA	249					
182	CAMERA CONTROL DATA	98					
183	CAMERA CONTROL DATA	0					
184	CAMERA CONTROL DATA	39					
185	CAMERA CONTROL DATA	0					
186	CAMERA CONTROL DATA	0					
187	CAMERA CONTROL DATA	0					
188	CAMERA CONTROL DATA	76					
189	CAMERA CONTROL DATA	19					
190	CAMERA CONTROL DATA	115					
191	CAMERA CONTROL DATA	0					
192	CAMERA CONTROL DATA	39					
193	CAMERA CONTROL DATA	20					
194	CAMERA CONTROL DATA	0					
195	CAMERA CONTROL DATA	0					
196	CAMERA CONTROL DATA	25					
197	CAMERA CONTROL DATA	240					
198	CAMERA CONTROL DATA	67					
199	CAMERA CONTROL DATA	0					
200	CAMERA CONTROL DATA	39					
201	CAMERA CONTROL DATA	18					
202	CAMERA CONTROL DATA	0					
203	CAMERA CONTROL DATA	0					
204	CAMERA CONTROL DATA	25					
205	CAMERA CONTROL DATA	240					
206	CAMERA CONTROL DATA	67					
207	CAMERA CONTROL DATA	0					
208	CAMERA CONTROL DATA	39					
209	CAMERA CONTROL DATA	18					
210	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
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		03.03 or later					
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212	M 1/2000 ADJUSTMENT DATA	0					
213	M 1/2000 ADJUSTMENT DATA	0					
214	CAMERA CONTROL DATA	210					
215	CAMERA CONTROL DATA	0					
216	LEAVING FILM LEADER	56					
217	LEAVING FILM LEADER	1					
218	CAMERA CONTROL DATA	0					
|	|	|					
233	CAMERA CONTROL DATA	0					
234	CAMERA CONTROL DATA	250					
235	CAMERA CONTROL DATA	0					
236	CAMERA CONTROL DATA	50					
237	CAMERA CONTROL DATA	0					
238	CAMERA CONTROL DATA	226					
239	CAMERA CONTROL DATA	4					
240	CAMERA CONTROL DATA	144					
241	CAMERA CONTROL DATA	1					
242	CAMERA CONTROL DATA	116					
243	CAMERA CONTROL DATA	64					
244	CAMERA CONTROL DATA	220					
245	CAMERA CONTROL DATA	5					
246	CAMERA CONTROL DATA	196					
247	CAMERA CONTROL DATA	9					
248	CAMERA CONTROL DATA	16					
249	CAMERA CONTROL DATA	39					
250	CAMERA CONTROL DATA	250					
251	CAMERA CONTROL DATA	0					
252	CAMERA CONTROL DATA	220					
253	CAMERA CONTROL DATA	5					
254	CAMERA CONTROL DATA	188					

ADDRESS	CONTENTS	CPU					REMARK
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		03.03 or later					
255	CAMERA CONTROL DATA	52					
256	CAMERA CONTROL DATA	0					
|	|	|					
261	CAMERA CONTROL DATA	0					
262	BATTERY CHECK ADJUSTMENT	170					
263	BATTERY CHECK ADJUSTMENT	160					
264	BATTERY CHECK ADJUSTMENT	160					
265	BATTERY CHECK ADJUSTMENT	150					
266	BATTERY CHECK ADJUSTMENT	150					
267	BATTERY CHECK ADJUSTMENT	141					
268	CAMERA CONTROL DATA	175					
269	CAMERA CONTROL DATA	204					
270	CAMERA CONTROL DATA	185					
271	CAMERA CONTROL DATA	200					
272	CAMERA CONTROL DATA	5					
273	CAMERA CONTROL DATA	10					
274	CAMERA CONTROL DATA	0					
|	|	|					
281	CAMERA CONTROL DATA	0					
282	CAMERA CONTROL DATA	20					
283	CAMERA CONTROL DATA	168					
284	CAMERA CONTROL DATA	32					
285	CAMERA CONTROL DATA	179					
286	CAMERA CONTROL DATA	51					
287	CAMERA CONTROL DATA	38					
288	CAMERA CONTROL DATA	150					
289	CAMERA CONTROL DATA	25					
290	CAMERA CONTROL DATA	242					
291	CAMERA CONTROL DATA	5					
292	CAMERA CONTROL DATA	80					
293	CAMERA CONTROL DATA	37					
294	CAMERA CONTROL DATA	37					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
295	CAMERA CONTROL DATA	100					
296	CAMERA CONTROL DATA	100					
297	CAMERA CONTROL DATA	20					
298	CAMERA CONTROL DATA	5					
299	CAMERA CONTROL DATA	0					
300	AF ADJUSTMENT DATA	15					
301	AF ADJUSTMENT DATA	15					
302	AF ADJUSTMENT DATA	20					
303	AF ADJUSTMENT DATA	20					
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309	AF ADJUSTMENT DATA	110					
310	AF ADJUSTMENT DATA	73					
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747	AF ADJUSTMENT DATA	0					
748	CAMERA CONTROL DATA	0					
749	CAMERA CONTROL DATA	0					
750	CAMERA CONTROL DATA	128					
751	CAMERA CONTROL DATA	0					
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ADDRESS	CONTENTS	CPU					REMARK
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|	|	|					
758	CAMERA CONTROL DATA	0					
759	CAMERA CONTROL DATA	0					
760	CAMERA CONTROL DATA	0					
761	CAMERA CONTROL DATA	32					
762	CAMERA CONTROL DATA	41					
763	CAMERA CONTROL DATA	32					
764	CAMERA CONTROL DATA	32					
765	CAMERA CONTROL DATA	51					
766	CAMERA CONTROL DATA	51					
767	CAMERA CONTROL DATA	0					
768	CAMERA CONTROL DATA	100					
769	CAMERA CONTROL DATA	179					
770	CAMERA CONTROL DATA	179					
771	CAMERA CONTROL DATA	179					
772	CAMERA CONTROL DATA	179					
773	CAMERA CONTROL DATA	179					
774	CAMERA CONTROL DATA	179					
775	CAMERA CONTROL DATA	0					
776	CAMERA CONTROL DATA	0					
777	CAMERA CONTROL DATA	135					
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|	|	|					
784	CAMERA CONTROL DATA	0					
785	CAMERA CONTROL DATA	0					
786	CAMERA CONTROL DATA	8					
787	CAMERA CONTROL DATA	16					
788	CAMERA CONTROL DATA	104					
789	CAMERA CONTROL DATA	30					
790	CAMERA CONTROL DATA	8					
791	CAMERA CONTROL DATA	8					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
792	CAMERA CONTROL DATA	32					
793	CAMERA CONTROL DATA	75					
794	CAMERA CONTROL DATA	16					
795	CAMERA CONTROL DATA	128					
796	CAMERA CONTROL DATA	16					
797	CAMERA CONTROL DATA	64					
798	CAMERA CONTROL DATA	5					
799	CAMERA CONTROL DATA	38					
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802	CAMERA CONTROL DATA	10					
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|	|	|					
814	CAMERA CONTROL DATA	0					
815	CAMERA CONTROL DATA	65					
816	CAMERA CONTROL DATA	104					
817	CAMERA CONTROL DATA	12					
818	CAMERA CONTROL DATA	6					
819	CAMERA CONTROL DATA	80					
820	CAMERA CONTROL DATA	12					
821	CAMERA CONTROL DATA	4					
822	CAMERA CONTROL DATA	64					
823	CAMERA CONTROL DATA	51					
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826	CAMERA CONTROL DATA	0					
827	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
828	CAMERA CONTROL DATA	0					
|	CAMERA CONTROL DATA	|					
833	CAMERA CONTROL DATA	0					
834	AE ADJUSMENT DATA	128					
835	AE ADJUSMENT DATA	128					
836	AE ADJUSMENT DATA	128					
837	AE ADJUSMENT DATA	128					
838	AE ADJUSMENT DATA	128					
839	AE ADJUSMENT DATA	128					
840	AE ADJUSMENT DATA	128					
841	CAMERA CONTROL DATA	32					
842	CAMERA CONTROL DATA	0					
843	CAMERA CONTROL DATA	0					
|	|	|					
850	CAMERA CONTROL DATA	0					
851	APERTURE ADJUSTMENT DATA	53					
852	CAMERA CONTROL DATA	7					
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861	CAMERA CONTROL DATA	14					
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866	CAMERA CONTROL DATA	20					
867	CAMERA CONTROL DATA	20					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
868	CAMERA CONTROL DATA	82					
869	CAMERA CONTROL DATA	92					
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872	CAMERA CONTROL DATA	166					
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875	CAMERA CONTROL DATA	0					
876	CAMERA CONTROL DATA	0					
877	CAMERA CONTROL DATA	246					
878	CAMERA CONTROL DATA	6					
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888	TTL ADJUSTMENT DATA	122					
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901	CAMERA CONTROL DATA	204					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
902	CAMERA CONTROL DATA	36					
903	CAMERA CONTROL DATA	36					
904	CAMERA CONTROL DATA	38					
905	CAMERA CONTROL DATA	204					
906	CAMERA CONTROL DATA	204					
907	CAMERA CONTROL DATA	204					
908	CAMERA CONTROL DATA	128					
909	CAMERA CONTROL DATA	20					
910	CAMERA CONTROL DATA	13					
911	CAMERA CONTROL DATA	8					
912	CAMERA CONTROL DATA	130					
913	CAMERA CONTROL DATA	10					
914	CAMERA CONTROL DATA	0					
|	|	|					
926	CAMERA CONTROL DATA	0					
⚠1 (Revise) 927	CAMERA CONTROL DATA	12					
⚠1 (Revise) 928	CAMERA CONTROL DATA	19					
929	CAMERA CONTROL DATA	180					
930	CAMERA CONTROL DATA	224					
931	CAMERA CONTROL DATA	60					
932	CAMERA CONTROL DATA	80					
933	CAMERA CONTROL DATA	70					
934	CAMERA CONTROL DATA	55					
935	CAMERA CONTROL DATA	35					
936	CAMERA CONTROL DATA	25					
937	CAMERA CONTROL DATA	28					
938	CAMERA CONTROL DATA	30					
939	CAMERA CONTROL DATA	36					
940	CAMERA CONTROL DATA	42					
941	CAMERA CONTROL DATA	44					
942	CAMERA CONTROL DATA	254					
943	CAMERA CONTROL DATA	127					
944	CAMERA CONTROL DATA	0					
945	CAMERA CONTROL DATA	48					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
946	CAMERA CONTROL DATA	0					
947	CAMERA CONTROL DATA	0					
948	CAMERA CONTROL DATA	0					
949	CAMERA CONTROL DATA	207					
950	CAMERA CONTROL DATA	143					
951	CAMERA CONTROL DATA	0					
952	CAMERA CONTROL DATA	223					
953	CAMERA CONTROL DATA	0					
|	|	|					
958	CAMERA CONTROL DATA	0					
959	CHECK SUM DATA	—					
960	CAMERA CONTROL DATA	0					
961	CAMERA CONTROL DATA	0					
962	CAMERA CONTROL DATA	0					
963	ERROR DATA	0					
964	NUMBER OF RELEASE TIMES	—					
965	NUMBER OF RELEASE TIMES	—					
966	CAMERA CONTROL DATA	0					
|	|	|					
971	CAMERA CONTROL DATA	0					
972	CAMERA CONTROL DATA	255					
973	CAMERA CONTROL DATA	0					
|	|	|					
982	CAMERA CONTROL DATA	0					
983	CAMERA CONTROL DATA	3					
984	CAMERA CONTROL DATA	—					
985	CAMERA CONTROL DATA	—					
986	CAMERA CONTROL DATA	0					
987	CAMERA CONTROL DATA	—					
988	CAMERA CONTROL DATA	0					
989	CAMERA CONTROL DATA	0					

ADDRESS	CONTENTS	CPU					REMARK
		MP1					
		03.03 or later					
990	RECORD OF SEQUENCE ERROR	0					
991	RECORD OF SEQUENCE ERROR	0					
992	CAMERA CONTROL DATA	—					
|	|	|					
1023	CAMERA CONTROL DATA	—					

INSPECTION CRITERIA and TOOLS

〔1〕 Inspection Criteria ····· R 1
〔2〕 Tools ····· T 1

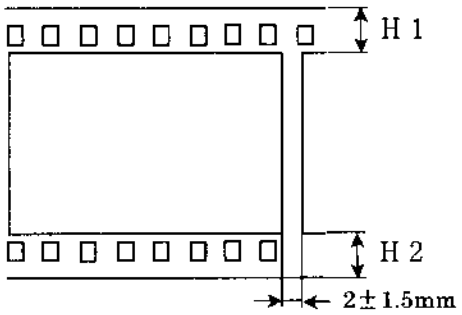
CONDITION FOR INSPECTION

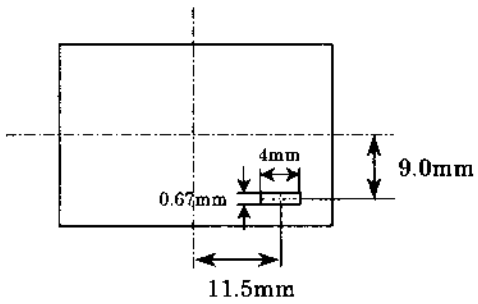
Normal temperature : ２０±５℃　　Humidity : ６５±２０％
Power source : ５．５±０．０３Ｖ　５Ａ or more at ０．５Ω load
Light source : ２８５６° Ｋ
Ｋ coefficient : １．１６
Camera : Finished Product

INSPECTION CRITERIA

●When using the power supply, set the output to 5.5V with a resistance of 0.5Ω.

INSPECTION ITEM	CRITERIA	REMARKS
Shutter System		Exposure Mode: M.S
(1) Tolerance	1/2000～1/1500" : 0±0.45EV	Shutter tester (EF-8000)
	1/1500～30s : 0±0.3EV	
(2) Curtain Speed	6.9ms or less	21mm
(3) Dispersion	1/2000～1/180 : Within 0.45EV	
	1/180～30s : Within 0.3EV	
(4) Curtain Bound	There should be no curtain bound.	
AE Image Surface Exposure		Exposure Mode: P.A.S.
(1) Tolerance	1/2000～1/125 : ±0.65EV	Shutter tester (EF-8000)
	less than 1/125 : ±0.5EV	AF50/1.4
(2) Dispersion		
AE Diaphragm Control Accuracy	LV12 (ISO100)、1/125	Exposure Mode: S.
(1) Tolerance	From the maximum aperture to 4th stop aperture : ±0.5EV	Shutter tester (EF-8000)
	From F8 to the minimum aperture : ±0.65EV	AF50/1.8
(2) Dispersion	Within 0.5EV	
AF Adjustment Accuracy		Personal Computer and other
(1) Yaw	Center : 0±4mrad Side : 0±10mrad Upper/Lower : 0±10mrad	special tools
(2) Pitch	Center : 0±5mrad Side : 0±10mrad Upper/Lower : 0±10mrad	
(3) Lark	0±50μm	
Diaphragm Lever Height	3.4±0.1mm	J18004
Main Mirror 4 5°	Upper/Lower : ±10'	When it is stood up, there
(Collimator	Right/Left : ±30'	should be no gap. J19002・J15391
Measured Value)	Distortion : Within 8'	・J18037 Hex key Wrench
Sub-Mirror 4 7.7 5°	Upper/Lower : −5' +20'～−45'	J19002・J18268-1
	Distortion : Within 8'	Hex key Wrench
M. B. F	Outer Rail : $46.67^{+0.03}_{-0.09}$ mm Outer Rail Parallelism : Within 0.06mm Height Difference between Inner and Outer Rails : 0.21mm～0.25mm Aperture Surface Stage Difference of Inner Rail : 0.26mm or more	J18001 Dial Gauge
∞ (Infinity) Agreement	±100μm	J18010

INSPECTION ITEM	CRITERIA	REMARKS
Battery Check (1) First Level (2) Second Level	 Reducing Direction : 4.9±0.2V Returning Direction : 5.2±0.2V Reducing Direction : 4.6±0.2V Returning Direction : 4.9±0.2V	Power Supply
Image Plane Size (50/1.4 F5.6) Image Plane Position Frame Interval	Length : $24^{+0.4}_{-0.0}$mm／Width : $36^{+0.4}_{-0.0}$mm [H 1 − H 2]=±0.4mm or less  2±1.5mm	Calipers ISO100 Film
Consumption Current Items④and later, the values are products of consumption current and operating time	①Main Switch is OFF : 100μA or less ②Main Switch is ON and Half-Push Timer is OFF : 100μA or less ③Main Switch is ON and Half-Push Timer is ON : 150mA or less ④AF50/1.8 Lens is driven : 500mAsec or less (Operating Time : 1000ms or less) ⑤AF70-210/4-5.6 Lens is driven : 800mAsec or less (Operating Time : 2000ms or less) ⑥Preview is Operated : 120mAsec or less (Operating Time : 200ms or less) ⑦Empty Release : 250mAsec or less (Operating Time : 300ms or less) ⑧Empty Feeding : 500mAsec or less (Operating Time : 1000ms or less) ⑨Film Winding : 350mAsec or less (Operating Time : 420ms or less) ⑩Film Rewinding : 7000mAsec or less (Operating Time : 15s or less)	
Half-Push Timer Time	After Half-Push Switch OFF : Power should be turned OFF 5±1sec later. After Releasing : Power should be turned OFF 2±1sec later	
Half-Push Timer Time (When using the built-in and external speed light)	After Half-Push Switch OFF : Power should be turned OFF 5±1sec later. After Releasing : Power should be turned OFF 5±1sec later	
Bulb Battery Life	4 hours or more	
Brightness for AF Assist Light turned ON	Brightness for Light turned ON (50/1.8) : It should be turned ON and equivalent to EV5 or less	

INSPECTION ITEM	CRITERIA	REMARKS
Finder	Visuality Ratio : Vertical and Horizontal 89±3%	
	Parallax : Upper/Lower, Right/Left : Within 0.5mm	
	Eye Point : Distance from eyepiece (In the case of $-1.52m^{-1}$(dpt)) 15.87mm±10% (In the case of $+0.77m^{-1}$ (dpt)pt) 23.05mm±10%	
DB Print Position *u* F 6 5 D N 6 5 Q D		Calipers I S O 1 0 0 Film

工 具 TOOLS

1．TOOLS FOR F65/N65

☆：NEW TOOL

	工具番号 TOOL No.	名 称 NAME	備 考 Others
☆	J15315-2	カメラ通信工具 CAMERA COMMUNICATION TOOL	For F70,F50 F60,F80
☆	J15386	電池工具 F65 BATTERY TOOL	
	J18314	RS232C 用電源工具 POWER SUPPLY FOR RS232C	
	J19109	MC-31	For F5,F100 F80
	J18266	ＡＦ調整用Ｚレンズ（１m用） AF TESTING LENS（For １m）	For F5,F100
☆	J15391	４５°出し工具（反射ミラー） TOOL MIRROR	
	J18268-1	サブミラー４５°出し工具 SUB MIRROR ANGLE ADJUSTMENT TOOL	For F5,F100
	J18273	ＡＦチャート AF ADJUSTMENT CHART	For F5,F100 F80
	J18230	YAW, PITCH 工具 YAW, PITCH ADJUSTMENT TOOL	For F5,F100 F90,F90X
⚠ ☆ （追加）	J15394	F65 用無限合致点検用スクリーン INFINITY FOCUS CHECK SCREEN FOR F65	
☆	J18322A	点検・調整ソフト　ＮＥＣ　5.0 インチ INSPECTION & ADJUSTMENT F.D.FOR NEC PC 5.0'	
☆	J18322B	点検・調整ソフト　ＮＥＣ　3.5 インチ INSPECTION & ADJUSTMENT F.D.FOR NEC PC 3.5'	
☆	J18322C	点検・調整ソフト　ＩＢＭ　5.0 インチ INSPECTION & ADJUSTMENT F.D.FOR IBM PC 5.0'	
☆	J18322D	点検・調整ソフト　ＩＢＭ　3.5 インチ INSPECTION & ADJUSTMENT F.D.FOR IBM PC 3.5'	

注）J18268-1 サブミラー４５°出し工具は、前ボディにシャッターを取り付けた後、使用できません。

Note：Do not use J18268-1 after mounting the shutter to the front body.

サービス計画課 M

差し替えページ ⚠ ×１

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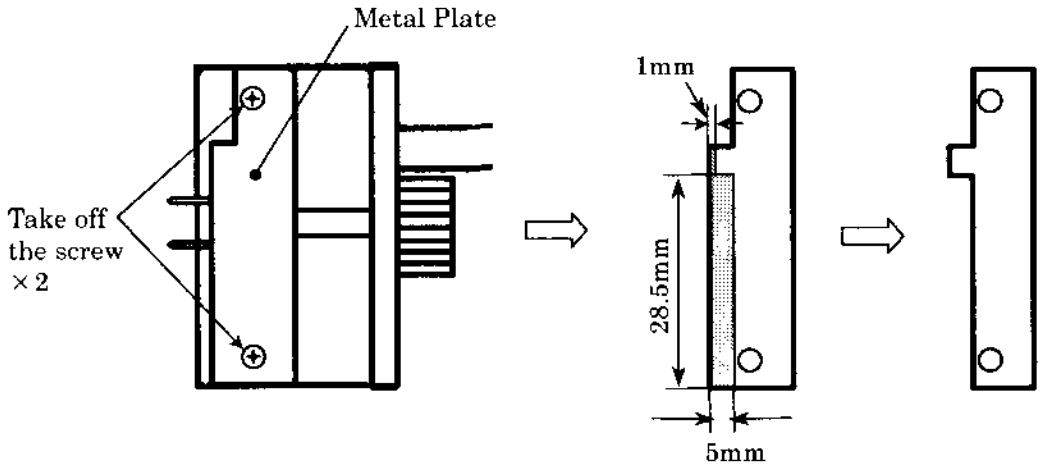
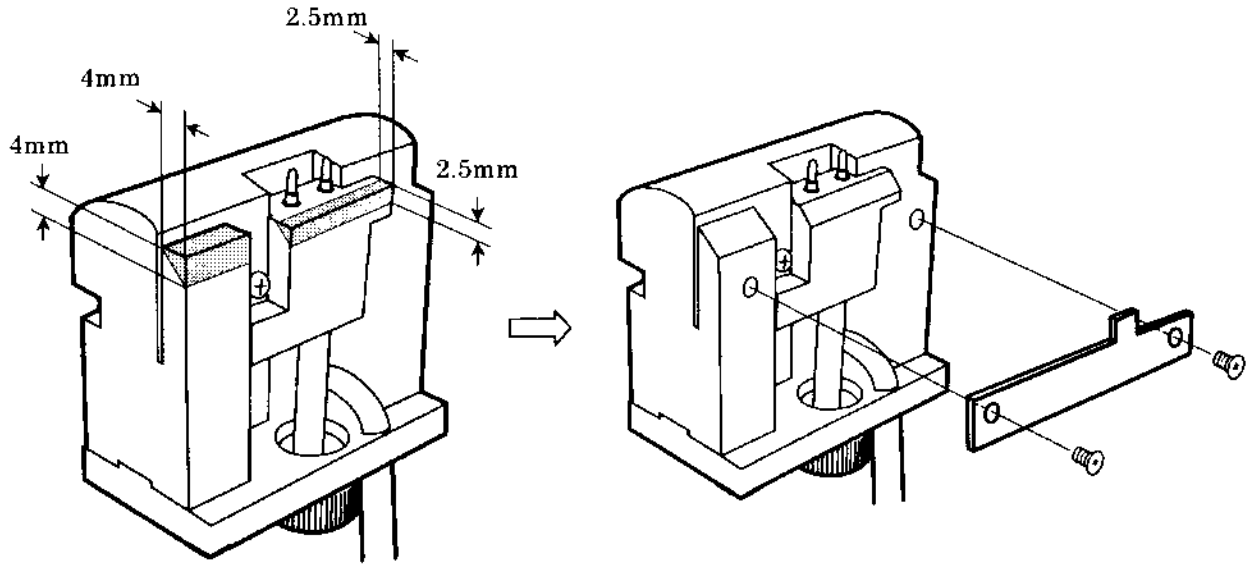
November 10, 2001

2 . Modification of the old communication tool (J15315-1)

It is impossible to use the old communication tool (J15315-1) as it is because the film cartridge chamber of F65 is smaller than the former cameras.

Therefore, to make the F65 series cameras communicate with the PC, use the communication tool J15315-2 which is established newly this time or use the old communication tool after cutting off a part of the tool according to the dimension of the figure below.

The new communication tool J15315-2 and the modified old tool can be used for the former cameras F50, F60, F70 and F80 etc.

Notes) When processing the old communication tool (J15315), modify the tool to J15315-1 according to the F80 Repair Manual first, and then perform the following modification.

▒▒▒ : Cut off this part